# A Form-Meaning Interface for Turkish

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# Declaration

I declare that this thesis has been composed by myself and that the research reported therein has been conducted by myself unless otherwise indicated.

Edinburgh, 26th November 1998

# Abstract

In this thesis, we offer an account of the mutual constraints on the levels of morphology, syntax, phonology, semantics and pragmatics in Turkish. We analyse the interpretive aspects of Turkish case morphology, syntax and phonology in terms of notions like *strongness*, *focus*, *topic* and *predication*. In elaborating and formulating these notions, we mainly rely on situation-theoretic ideas and tools.

We start by examining the semantics of the (Turkish) accusative suffix. We show that a direct object in Turkish must carry this suffix if it receives one of the interpretations which are usually categorised as *strong* (namely *definite*, *partitive*, *specific* or *strongly quantified* interpretations). We later on offer a unified account of the semantics of case morphology in Turkish, which rests on the situation-theoretic distinction between *described situations* and *resource situations*. The framework set up by this account allows us to provide a plausible explanation of the semantics of strongness and noun incorporation in Turkish, too.

We also offer an analysis of variations in word order and phonology in Turkish in terms of *focus* and *topic*. We analyse focal constituents with a nominal head and those with a verbal head separately. We argue that these two kinds of foci display phonologically different but syntactically similar behaviours with respect to the structuring of focus in Turkish. As for the topic-comment articulation, we claim that this is a pragmatically motivated instance of *predication* where the topic is the *subject of predication* and the comment is the *predicate*. After a discussion of topic-comment, we propose a general semantic analysis of subject-predicate relations.

Case marking and definiteness marking in Turkish are two other phenomena which we investigate in this thesis. We propose some principles that formulate the strategies employed in Turkish for case assignment and definiteness marking.

We conclude our analysis with an HPSG grammar that brings together and formalise our major findings.

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# Contents

# Chapter 1

# Introduction

## 1.1 Main goals

This dissertation aims to provide a *form/meaning* analysis of Turkish sentences. That is, this is a study on how meaning is encoded through linguistic structures in Turkish. Of course, we are aware that we cannot capture every aspect of the interaction between linguistic form and linguistic meaning. For this reason, we confine ourselves to a certain theoretical scope. (1) outlines the formal and interpretive aspects of Turkish that constitute the purview of this study:

(1) a. Formal issues:
- case marking
- marking of definiteness
- word order variations (precedence and dominance relations)
- intonational variations

b. Interpretive issues:
- referential aspects of NP interpretation (definiteness, specificity, quantification, and genericity)
- presuppositionality
- focushood
- topicality
- predication

In developing the interpretive side of our analysis, we will mainly rely on situation-theoretic ideas and tools (Barwise & Perry 1983, Barwise & Cooper 1993). As to the side of the analysis relating to linguistic form, we will make use of ideas developed in the HPSG framework to a great extent (Pollard & Sag 1994).

In Section 1.3, we will present the specific questions which we will address in our account. This will allow us to state our objectives more clearly. Let us now introduce some basic facts about Turkish morphology and phonology to set up a framework to start our discussion.

## 1.2 An introduction to Turkish morphology and phonology

Turkish is an agglutinative language. That is, in Turkish the grammatical elements are joined together in such a way that segmentation is relatively easy (cf. Underhill 1986):

(2)

| | |
|---|---|
| *ev* | 'house' |
| *ev-ler* | 'houses' |
| *ev-ler-im* | 'my houses' |
| *ev-ler-im-de* | 'in my houses' |
| *ev-ler-im-de-ki* | 'that which is in my houses' |
| *ev-ler-im-de-ki-ler* | 'those which are in my houses' |

Besides, except for two prefixal processes involving reduplication, Turkish is exclusively suffixing. Underhill (1986) notes that the inflectional suffixes may be divided into two groups, a noun paradigm and a verb paradigm. He describes these two paradigms as follows:

The elements of the verb paradigm, in order, are:

(3)

1. VERB STEM.
2. DERIVATION: reflexive *-In*, reciprocal *-Iş*, causative *-DIr*, passive *-Il*.
3. NEGATIVE: inability *-(y)E* and negative *-mE*.
4. TENSE: aorist *-Ir*, progressive *-Iyor*, definite past *-DI*, narrative past *-mIş*, future *-(y)EcEk*, optative *-(y)E*, necessitative *-mElI*, conditional

*-SE*. (Notice that not all of these are tenses in the strict sense of the term.)

5. AUXILIARY: past *-(y)mIş*, conditional *-(y)sE*, adverbial *-(y)ken*.
6. PERSON.

The elements of the noun paradigm, in order, are:

(4)
1. NOUN STEM.
2. PLURAL: *-lEr*.
3. POSSESSIVE.
4. CASE: objective/accusative *-(y)I*, genitive *-(n)In*, dative *-(y)E*, locative *-dE*, ablative *-dEn*, instrumental/comitative *-(y)lE*.
5. RELATIVE: *-ki*. (This suffix is added only to genitive or locative suffixes.)

Turkish suffixes alter in form due to some morphophonemic processes, such as vowel harmony. In this dissertation, capital letters will be used as cover symbols for morphemes alternating between differing forms. (5) shows the symbols used for that purpose along with the Turkish characters that they stand for. (The IPA equivalents of the non-English orthographic symbols are given in square brackets.)

(5)

| Symbol | Surface form |
|---|---|
| *I* | *i, ü [y], ı [ɪ], u* |
| *E* | *e, a* |
| *D* | *d, t* |
| *C* | *c, ç [tʃ]* |
| *G* | *g, ğ [ɣ], k* |

Another alternation results from the fact that some suffixes are preceded by a buffer consonant, *y* or *n*, according to whether they follow a vowel or a consonant. We write the buffer consonants in brackets.

Turkish nouns can occur with six different cases: nominative, accusative, genitive, dative, ablative, and locative. Except the nominative case, each case is associated with a morpheme and its vowel-harmony variants, namely allomorphs. The dative, ablative and locative cases have two allomorphs which depend on whether the closest vowel in the noun stem is a front or back vowel:

(6)

| Stem Vowel | Dat | Abl | Loc |
|---|---|---|---|
| a/ı/o/u | -(y)a | -dan | -da |
| e/i/ö/ü | -(y)e | -den | -de |

The accusative and genitive suffixes have four allomorphs depending on whether the closest vowel is rounded or not and is front or back:

(7)

| Stem Vowel | Acc | Gen |
|---|---|---|
| a/ı | -(y)ı | -(n)ın |
| e/i | -(y)i | -(n)in |
| o/u | -(y)u | -(n)un |
| ö/ü | -(y)ü | -(n)ün |

In Turkish, excluding the accusative and genitive suffixes, the absence of a case suffix when it is syntactically licensed results in total ungrammaticality:

(8) a. Oya *Kaya-ya / *Kaya* bak-tı.
Oya Kaya-dat Kaya look-pst
'Oya looked at Kaya.'

b. Kaya *sandalye-de / *sandalye* otur-uyor.
Kaya chair-loc chair sit-prog
'Kaya is sitting in the chair.'

c. Mektup *Türkiye-den / *Türkiye* gel-di.
letter Turkey-abl Turkey come-pst
'The letter came from Turkey.'

d. Kadın ekmeğ̃-i *bu bıçak-la / *bu bıçak* kes-ti.
woman bread-acc this knife-inst this knife cut-pst
'The woman cut the bread with this knife.'

The genitive and accusative are of particular interest because they differ from the others in that the syntactic environments in which they can occur do not provide necessary conditions for their use. In other words, their absence in a certain position does not directly result in ungrammaticality. The accusative suffix marks direct objects. But, as exemplified below, it is not the case that all direct objects must necessarily carry it.

(9) Oya *bir kitab-ı* / *bir kitap* oku-du.
Oya one book-acc one book read-pst
'Oya read a book.'

The genitive suffix marks the possessor of a possessive noun phrase or the subject of a nominalized or relativized clause. Again, these syntactic environments provide only sufficient but not necessary conditions for the use of the suffix in question. Turkish possessive constructions can be divided to two groups according to whether the subject is genitively marked or appears as a bare noun. Both of the sentences below are grammatical:

(10) a. Polis bahçe-de *bir hırsız-ın maske-si-ni* bul-du.
police garden-loc one thief-gen3 mask-poss3-acc find-pst
'The police found a thief's mask in the garden.'

b. Polis bahçe-de *bir hırsız maske-si* bul-du.
police garden-loc one thief mask-poss3 find-pst
'The police found a thief mask in the garden.'

There are four main subordinate clause morphemes in Turkish: the gerundive morphemes *-DIG* and *-EcEG*, and the infinitival morphemes *-mEk* and *-mE*. The verb of a nominalized clause is marked by one of these morphemes. The subject of such a clause may either carry the genitive suffix or appear without case morphology, as illustrated in the following example:

(11) a. Ev-e *bir hırsız-ın* gir-diğ̄-i-ni gör-dü-m.
house-dat one thief-gen3 enter-ger-poss3-acc see-pst-1sg
'I saw that a thief went into the house.'

b. Ev-e *bir bir hırsız* gir-diğ̄-i-ni gör-dü-m.
house-dat one thief enter-ger-poss3-acc see-pst-1sg
'I saw that a thief went into the house.'

In Turkish there are two strategies of relativization that differ from each other according to the morphological marking of the verbal head of relative clauses. In one of them this marking is realized by the suffix *-(y)En* and in the other it is realized by means of the suffix *-DIK*. Furthermore, the non-relativized subject of a relative clause of the former kind appears without case morphology, whereas that of a relative clause of the latter kind bears the genitive suffix. The following example illustrates this state of affairs:

(12) a. Polis-e *bir hırsız-ın* gir-dig̃-i ev-i
policeman-dat one thief-gen3 enter-part-poss3 house-acc
göster-di-m.
pont.out-pst-1sg
'I pointed out the house that a thief had entered to the policeman.'

b. Polis-e *bir hırsız* gir-en ev-i göster-di-m.
policeman-dat one thief enter-part house-acc pont.out-pst-1sg
'I pointed out the house that a thief had entered to the policeman.'

## 1.3 Questions to be addressed

### 1.3.1 Morhological questions

Case marking semantics in Turkish will be one of the major areas that we will investigate in this study. We will start the discussion of the semantics of Turkish case morphology by raising the following question:

(13) QUESTION#1:
Under what semantic conditions is the Turkish accusative suffix, *-(y)I*, obligatorily used?

Enç (1991) argues that a Turkish direct object (DO) has to carry the accusative suffix if and only if it is *partitive-specific*, by which she (roughly) means: the referent(s) of the NP is (are) linked to already established discourse referents through a subset relation (cf. Section 2.1). However, we will see that although this is a sufficient condition for the obligatory use of the accusative suffix in the DO position of a Turkish sentence, it is not a necessary one (cf. Sections 2.2 and 2.3). For example, of these two sentences:

(14) a. Oya Kaya-nın bir doktor-u öldür-düg̃-ü-ne inan-ıyor.
Oya Kaya-gen3 one doctor-acc kill-ger-poss3-dat believe-prog
'Oya believes that Kaya killed a doctor.'

b. Oya Kaya-nın bir doktor öldür-düg̃-ü-ne inan-ıyor.
Oya Kaya-gen3 one doctor kill-ger-poss3-dat believe-prog
'Oya believes that Kaya killed a doctor.'

only the (a) one can be used to describe Oya's mental state if her belief holds of a particular doctor and, crucially, this is the case even if the DO is not partitive-specific. (14a) can be a discourse-initial utterance with no familiar set of doctors. As far as Oya's belief is concerned with a particular doctor, the DO will have to carry case morphology.

Our search for the semantic conditions under which the Turkish accusative suffix is obligatorily used will lead us to argue that a Turkish DO must carry this suffix, if it receives an interpretation that is:

- partitive,
- (epistemically) specific or
- strongly quantified,

all of which we categorize as 'strong' interpretations.

Afterwards, we will try to find a general semantic phenomenon underlying all these apparently different semantic conditions. As a first attempt, we will examine the interaction between presuppositionality and accusative marking in Turkish (cf. Section 2.5). Diesing (1992), relying on Enç's (1991) account of the use of accusative morphology in Turkish, claims that it is presuppositionality that is the underlying semantic condition for the use of accusative suffix in Turkish. However, we will see that presuppositionality is not always a sufficient condition for the use of this suffix in Turkish. Consider the following question-answer pair:

(15) Kim Kaya-ya *bir kitap* ver-di?
who Kaya-dat one book give-pst
'Who gave Kaya a book?'

Oya Kaya-ya *bir kitap* ver-di?
Oya Kaya-dat one book give-pst

'Oya gave Kaya a book?'

Both the question and the answer presuppose the existence of a book as the referent of the NP *bir kitap* 'a book'. Nevertheless, in both cases this NP felicitously appears in the DO position without case morphology.

In Chapter 3, we will argue that the ultimate semantic criterion for the obligatory use of accusative morphology in Turkish can be formulated in terms of the situation-theoretic distinction between *described situations* and *resource situations*. Our claim is that it is the distinctness of its resource situation and the described situation that forces a Turkish DO to carry case morphology. Later on, will generalize this claim to NPs with different grammatical roles (cf. Section 6.3.2).

We give a separate analysis for the genitive suffix, *-(n)In*, because, unlike the others, its use is primarily conditioned by a syntactic phenomenon that will be the subject matter of a later discussion, namely *the structuring of subject-predicate relations* (cf. Chapter 6).

### 1.3.2 Syntactic questions

The canonical/basic word order in Turkish is usually considered to be SOV. But Turkish is a very flexible language in terms of word order variations. Even a simple sentence like the one in (16) may have six different permutations:

(16) a. Oya elma-yı ye-di.
Oya apple-acc eat-pst
'Oya ate the apple.'

b. Elma-yı ye-di Oya.

c. Elma-yı Oya ye-di.

d. Oya ye-di elma-yı.

e. Ye-di Oya elma-yı.

f. Ye-di elma-yı Oya.

Each of these is a perfectly grammatical sentence.

It is usually assumed that this flexibility comes from the fact that in Turkish constituents are morphologically marked to signal their grammatical roles. Since, in general, the grammatical role of a constituent does not rely on its sentential position, each constituent gets a status relatively independent of its sentential context. However, it is also argued that the existence of so many permutations is not just the result of a stylistic variation but it has an interpretive value. Thus, the question which we aim to find an answer to is this:

(17) QUESTION#2:

What does word order encode in Turkish?

Many linguists consider the immediately preverbal and initial positions in Turkish sentences as focus and topic positions, respectively (cf. Erguvanlı 1984, Kural 1992, among others).[1] However, we will see that it is not difficult to find cases where focal constituents occur in non-preverbal positions (cf. Section 4.2.2) and cases where topical constituents occur in non-sentence-initial positions (cf. Section 5.4). We argue that an account of the syntactic structuring of focus and topic in Turkish cannot be satisfactory by taking into consideration only precedence relations, but should also make appeal to more configurational notions. We claim that in Turkish foci are restricted to 'clause-internal' positions, whereas topics have to occur 'clause-externally'. We will exploit Banfield's (1982) notion of *expression* in defining what is 'clause-internal' and what is 'clause-external' in Turkish (cf. Section 4.2.4)

From the fact that all possible permutations of example (16) are grammatical, it should not be concluded that there is no grammatical constraint on word order in Turkish. Unlike the arguments of the sentence in (16), some arguments, namely direct objects without case morphology, are grammatically restricted to the preverbal slot and cannot be separated from that position except by certain particles (e.g. *dA* 'also'). For this reason, the sentence in (18) has only two grammatical permutations:

(18) a. Oya bir elma ye-di.
Oya one apple eat-pst
'Oya ate an apple.'

b. Bir elma ye-di Oya.

c. *Bir elma Oya ye-di.

d. *Oya ye-di bir elma.

e. *Ye-di Oya bir elma.

f. *Ye-di bir elma Oya.

Now, the question is:

[1]Roughly speaking, *focus* is what is discourse-pragmatically most relevant, and *topic* is what the sentence is about. We will give more elaborate characterizations of these notions in Chapters 4 and 5.

(19) QUESTION#3:

Why do direct objects without case morphology tend to be restricted to the immediately preverbal slot?

The search for an answer to this question will lead us to postulate a syntactic strategy for case assignment in Turkish, in addition to the lexical one (cf. Section 3.4.2).

Turkish does not have a definite article. A nominal lacking a determiner may display an ambiguity with respect to definiteness:

(20) Oya-yı köpek ısır-dı.
Oya-acc dog bite-pst
'The dog bit Oya.'

or

'A dog/dogs bit Oya.'

When this sentence is interpreted out of the blue, *köpek* 'dog' may receive either a definite or an indefinite reading. However, not all nominals without determiners are ambiguous in terms of definiteness. When the following sentence is uttered discourse-initially, the only interpretation available for the bare nominal *köpek* 'dog' is the definite one:

(21) Köpek Oya-yı ısır-dı.
dog Oya-acc bite-pst
'The dog bit Oya.'

At first glance, it seems that what is at issue here is whether the nominal occurs preverbally or not. However, as (16) exemplifies, even a preverbal nominal can receive an unambiguous definite interpretation. Besides, contrary to what is sometimes argued (cf. Nilsson 1985), such nominals do not appear only in preverbal positions. When embedded in an appropriate context, even a non-preverbal nominal can be ambiguous between a definite and a 'non-definite' interpretation. The sentences in the following dialogue can receive either of the interpretations indicated in the English translations:

(22) Okul-a kim git-ti?
school-dat who go-pst
'Who went to school/the school?'

Okul-a Oya git-ti?
school-dat Oya go-pst

'Oya went to school/the school.'

So, the question that comes to mind is this:

(23) QUESTION#4:

What is the linguistic strategy Turkish uses to mark definiteness?

We will argue (in Section 7.3.4) that the phenomenon that needs to be identified in order to get a clear picture of definiteness marking in Turkish is that of *noun incorporation*. Our claim is that a Turkish nominal with no determiner may display an ambiguity between an incorporated (non-definite) interpretation[2] and a definite one. In some cases (such as example (21)), a bare nominal is not allowed to receive an incorporated reading. In these cases, the only reading available for the nominal is the definite one. In our analysis, we also offer an explanation for such cases. We argue that a nominal like the subject of the sentence in (21) serves as the *subject of predication* and that a subject of predication cannot be assigned a weak interpretation such as an incorporated (non-definite) reading. The semantics of subjects of predication will be the subject matter of Section 6.1.

### 1.3.3 Intonational questions

Like word order, Turkish intonation too is quite flexible. That is, Turkish has a malleable intonational structure. For instance, the sentence stress and pitch accent may fall on any of the constituents of the following sentence.[3]

(24) a. Oya ELMA-YI ye-di.
Oya apple-acc eat-pst
'Oya ate the apple.'

b. Oya elma-yı YE-DI.

c. OYA elma-yı ye-di.

[2]We will analyse the phenomenon of noun incorporation in Section 3.4.

[3]Henceforth, the element associated with the sentence stress and pitch accent will be written in small caps.

The question to which we offer a (partial) answer is the following:

(25) QUESTION#5:

How does intonational variation interact with sentence interpretation in Turkish?

We endeavour to show that like word order variations, intonational variations in Turkish can be accounted for to a great extent by the aid of notions like *focus* and *topic*. We hold the view that a distinction needs to be made between focal constituents with a nominal head and focal constituents with a verbal head in analyzing the phenomenon of focus in Turkish. We will show that these two kinds of focal constituents display different (almost) contrasting behaviours with respect to the phonological structuring of focus in Turkish: in nominal foci the focal accent falls on the nominal head (cf. Section 4.2.1), whereas in verbal foci the focal accent falls on the leftmost complement within the VP (cf. Section 4.2.4). As for topics, we will make the following observation: in Turkish preverbal topics are optionally associated with a special pitch accent, while postverbal ones are realised with a level tone.

## 1.4 Organization

Beyond this first chapter, the dissertation is organized as follows:

In Chapter 2, several semantic conditions that require accusative morphology in the DO position of Turkish sentences are identified. It is shown that when a Turkish DO receives a *partitive, specific*, or *strongly quantified* interpretation it has to carry the accusative case suffix (cf. Sections 2.1-2.3). It is also demonstrated that this constraint is independent of whether the DO is *object-* or *kind-referring* (cf. Section 2.4). The discussion in this chapter ends with an initial attempt to discover an underlying unique semantic phenomenon behind all obligatory uses of the accusative suffix in Turkish (cf. Section 2.5).

The main aim of Chapter 3 is to provide a unitary account of the semantics of accusative marking in Turkish. After an introduction to situation theory (cf. Section 3.1), the semantics of accusative morphology in Turkish is given a situation theoretic account (cf. Section 3.2). This account is complemented with a situation-theoretic treatment of strength and noun incorporation (cf. Sections 3.3 and 3.4). Further-

more, a proposal is made as to the strategies used for case assignment in Turkish (cf. Section 3.4.2).

Chapter 4 starts with a general discussion of the notion of focus and the complementary notion of background (cf. Section 4.1). Afterwards, an account of the phonological and syntactic structuring of focus in Turkish is provided, which aims to capture the interactions between syntax and phonology and to remedy the defects in the previous accounts (cf. Section 4.2). The chapter ends with the presentation of a situation-theoretic representation format in which the focus-background partitioning of the sentence can be dealt with at the level of semantics (cf. Section 4.3).

In Chapter 5, a distinction is made between the *topic-comment* and *background-focus* articulations of the sentence (cf. Section 5.2). The topic-comment analysis of the sentence is claimed to be a phenomenon of *predication* where the *topic* is the *subject of predication* and the comment is the *predicate* (cf. Section 5.3). An account of how the topic-comment articulation is structured in Turkish is offered (cf. Section 5.4). A situation-theoretic representation is proposed for topic-comment structures (cf. Section 5.5).

Chapter 6 starts with a discussion of the semantics of subject-predicate relations. Two semantic constraints are identified that apply to subjects of predication (cf. Section 6.1). Afterwards, an argument is offered to show that the structure of the sentence is sensitive to the difference between its context-independent and context-dependent interpretations (cf. Section 6.2). The linguistic reflexes of *backgrounding* and *predication* in Turkish are re-considered from this new perspective (cf. Section 6.3).

In Chapter 7, a grammar that brings together most of the ideas presented in the preceding chapters is developed within the HPSG framework.

Chapter 8 comprises a summary of the major arguments of the dissertation and a brief presentation of suggestions for further work.

# Chapter 2

# An Initial Account of the Semantics of Turkish Accusative Morphology

In this chapter, we aim to come up with a list of semantic conditions under which the Turkish accusative suffix, *-(y)I*, is obligatorily used. In each section, after a discussion of a certain semantic distinction we will examine the interaction of that distinction with accusative marking in Turkish. The distinctions we will discuss are the following:

- *partitive vs. non-partitive* interpretation
- *(epistemically) specific vs. nonspecific* interpretation
- *strong vs. weak* quantification
- *object- vs. kind-level* reference

*Partitive, (epistemically) specific* and *strongly quantified* interpretations fall in a class of readings which are usually categorised as *strong* readings (as opposed to *weak* ones) (cf. Milsark 1974, de Hoop 1992, Meinunger 1993, Büring 1994 among others).[1] We will show that a Turkish DO has to carry the accusative suffix if it receives one of these strong readings. We will also argue that this constraint is

[1]It is noteworthy that we take 'strongness' (or 'weakness') to be a conceptual property of particular instances of NP interpretation not necessarily manifest by the formal features of NPs.

not contingent on whether the DO receives that interpretation on the *object-* or *kind-level.*

Before moving on, we should make a point that should be kept in mind throughout the discussion pursued in this chapter. The interaction we argue to exist between the indicated strong readings and the use of accusative morphology is not a bi-directional one. We only argue that the strong interpretations in question require case morphology in the DO position, not that the presence of accusative morphology in that position necessarily gives rise to one of these interpretations. In other words, for the time being we will confine ourselves to the weak claim that strongness is a sufficient condition for the Turkish accusative suffix to be obligatorily used. In Chapter 6, we will formulate the interaction between strongness and the use of this suffix in a bi-directional way, after having introduced some semantic tools required to make this formulation.

## 2.1 Partitivity

### 2.1.1 Characterization

Enç (1991) introduces a view of specificity where *partitivity* plays a special role. On her account, an NP is *partitive-specific* if its referent(s) is (are) linked to already introduced discourse referents through a subset relation. Some NPs overtly encode this linking relation, such as *two of the boys*, while some others are covert partitives in the sense that their linguistic form does not reveal the linking relation that renders them partitive-specific. The partitive specificity of the latter kind of NPs is determined by contextual factors. Suppose that the following sentences (Enç's (23) and (24)) constitute a bit of discourse and that the domain of discourse is empty prior to the utterance of (26).

(26) Several children entered the museum.

(27) I saw two boys at the movies.

If the referent of *two boys* is included in the referent of *several children*, then the NP *two boys* receives a (covert) partitive reading. This links the two boys to the domain of discourse and, in this way, renders the NP specific. This can be the case, for example, in a situation where two boys among the children who visit the museum later go to the movies, and the NP is intended to refer to these boys. If

the referent of *two boys* is not included in the referent of *several children*, then the NP is interpreted to be non-partitive. As there are no other discourse referents the two boys can be linked to, this will be a nonspecific interpretation of the NP. Such an interpretation can arise, for instance, in a situation where two boys choose to go to the movies instead of the museum.

### 2.1.2 Partitivity and accusative marking in Turkish

Enç points out that when a partitive-specific occurs in the DO position of a Turkish sentence, it has to carry the accusative case suffix. The example below illustrates this fact:

(28) a. *Çocuk-lar-ın iki-si-ni* gör-dü-m.
child-pl-gen3 two-poss3-acc see-pst-1sg
'I saw two of the boys.'

b. **Çocuk-lar-ın iki-si* gör-dü-m.

Enç also notes that what brings about the obligation in question is not a mere syntactic feature of possessive constructions. Covert partitives, which are syntactically ordinary NPs, are subject to the same constraint. Consider the example in (29):

(29) İçeri-ye üç çocuk gir-di.
inside-dat three child enter-pst
'Three children came in.'

a. *İki çocuğ-u* tanı-yor-du-m.
two child-acc know-prog-pst-1sg
'I knew *two children.*'

b. *??İki çocuk* tanı-yor-du-m.

In this fragment of discourse, when the two children talked about in the second sentence are meant to be included in the three children introduced by the first sentence, the DO referring to them is obliged to carry the accusative suffix. The use of the DO without case morphology requires the two children to be excluded from the set of children established in the first sentence. This yields an incoherent fragment of discourse and, therefore, gives rise to a certain oddity.

### 2.1.3 Partitivity and definiteness

In Enç's (1991) view of specificity, definites are considered to constitute a subclass of partitives. According to Enç, both definites and indefinite-partitives require their discourse referents to be linked to previously established discourse referents. What distinguishes them is the nature of the linking relation. The linking relevant for indefinite-partitives is the relation of *proper inclusion*; while the linking relevant for definites is the *identity* relation. As identity of referents entails inclusion, definites are also partitives.

A formulation of definiteness in terms of a linking relation to previously established referents is proposed by Hawkins (1978). In his account, felicitous use of the definite article requires the referent of the NP to be uniquely/exhaustively identifiable to the hearer. He analyses this constraint into two parts, which reflect respectively the pragmatic and semantic sides of the use of the definite article. In a felicitous use of the definite article, the speaker:

1. instructs the hearer to locate the referent in some shared set of objects;
2. refers to the totality of the objects or mass within this set that satisfy the referring expression.

'Shared sets' are pragmatically restricted sets of entities that the speaker and hearer have in common. Hawkins distinguishes a number of such shared sets: the *previous discourse set*, the *immediate situation set*, the *larger situation set* and the *association set*. The previous discourse set contains those entities which have already been mentioned in the current discourse, and also those entities which were introduced by any other discourses the current speaker and hearer have participated in. The immediate situation set contains those entities which are part of the immediate situation of discourse. The larger situation set contains those entities which are given by virtue of being part of specific or general background knowledge. As for the association set, it contains entities which the speaker assumes the hearer can infer via logical or plausible reasoning from other discourse entities. In the sentences below, *the bookshop over there*, *the author*, *the book*, *the Prime Minister* exemplify definites whose shared sets are the *immediate situation set*, the *association set*, the *previous discourse set*, and the *larger situation set*, respectively:

(30) I bought a book from *the bookshop over there* yesterday. *The author* wrote *the book* to provide evidence for some allegations about *the Prime Minister*.

Enç points out that definites, being also partitives, have to carry the accusative suffix, *-(y)I*, in the DO position of Turkish sentences. Consider (31):

(31) Oya *şu adam-ı* / **şu adam* ara-dı.
Oya that.over.there man-acc that.over.there man call-pst
'Oya called *that man over there.*'

The DO in this example refers to an entity that is in the immediate situation and it has to be overtly marked with the accusative suffix. The same constraint also applies to DOs referring to entities evoked in the previous discourse. Consider the following bit of discourse:

(32) Oda-da bir çocuk$_i$ ve bir kadın$_j$ var-dı.
room-loc one child and one woman present-pst
'There was a child$_i$ and a woman$_j$ in the room.'

Çocuk$_i$ *kadın-ı$_j$* / **kadın$_j$* tanı-mı-yor-du.
child woman-acc woman know-neg-prog-pst
'The child$_i$ did not know the woman$_j$.'

In order for the italicized NP in the example above to receive the indicated definite interpretation it has to bear case morphology. It is worth noting that its non-marked form is not ungrammatical, but it is just unacceptable in the given context. The reason for this is that without case morphology this NP would yield an indefinite interpretation (that is, it would not be referring to the entity already evoked in the preceding sentence) and this would render this two-sentence discourse bit considerably incoherent.

Similarly, an NP referring to an entity located in the larger situation set will have to carry case morphology in the DO position of a Turkish sentence. The following example, which is supposed to be discourse-initially uttered, illustrates this fact:

(33) a. Bugün *Chomsky-i* / *Başbakan-ı* gör-dü-m.
today Chomsky-acc Prime Minister-acc see-pst-1sg
'I saw Chomsky / the Prime Minister today.'

b. Bugün **Chomsky* / **Başbakan* gör-dü-m.

We make the same observations for NPs whose status of definiteness is established by an associative relation, too:

(34) Dün bir otobüs-e bin-di-m.
yesterday one bus-dat get.on-pst-1sg
'I got on a bus yesterday.'

*Şoför-ü* / **Şoför* tanı-yor-du-m.
driver-acc driver know-prog-pst-1sg

'I knew the driver.'

In order for the DO of the second sentence to receive a definite interpretation (on the basis of an associative relation to the dative marked NP in the first sentence), it has to carry the accusative suffix. Without case morphology the DO would be restricted to an indefinite interpretation, which would render the given fragment of discourse incoherent.

## 2.2 Epistemic specificity

### 2.2.1 Introduction

Enç's partitivity does not seem to be capable of covering all cases of obligatory use of Turkish accusative morphology. In this and the following sections we will see two other semantic conditions necessitating the use of the accusative suffix in the DO position of Turkish sentences. We will start our discussion with an observation on the behaviour of WH-words with respect to accusative morphology in Turkish.

Enç is not the only linguist who assigns partitivity a special role in the characterization of NPs.[2] For example, Pesetsky (1987) introduces the term *D-linking*, which seems to refer to the same phenomenon as Enç's partitive-specificity,[3] in

[2]It is worth noting that Enç's account of the semantics of Turkish accusative morphology in terms of a relation of inclusion is preceded by Nillson's (1985) account. Nillson exploits the idea of a subset relation between discourse referents in order to draw a distinction between indefinites with and without a *specified reference domain*: "To the hearer the set of potential referents may be the whole, in principle infinite, class of things denoted by [an indefinite NP] (e.g. *a carpet* meaning 'one member from the class of carpets') or it may be a subset of that class delimited and specified for both the speaker and the hearer by the time of the utterance, i.e. a "shared set" [in the sense of Hawkins (1978)] (e.g. *a carpet* meaning 'one of the previously mentioned carpets'.)" (p. 31). In the latter case, the indefinite will have a *specified reference domain* and will always have to carry case morphology in the DO position of a Turkish sentence; but in the former it will not.

[3]This point is expressed also by Enç (1991): "This phenomenon, which Pesetsky calls D-*linking* (discourse linking) is exactly the phenomenon characterized here as specificity" (fn. 8).

order to make a distinction between *discourse-linked (D-linked)* WH-words and *non-discourse-linked (non-D-linked)* ones. According to Pesetsky, *which-phrases* are D-linked, whereas *who* and *what* are normally not D-linked. He argues that when a speaker asks a question like *which book did you read?*, the range of felicitous answers is limited by a set of books both the speaker and hearer have in mind. Such a delimitation renders a WH-word D-linked. Interestingly, Turkish *which*-phrases must carry the accusative suffix when they occur in the DO position of an interrogative sentence. (35) exemplifies this fact:

(35) a. *Hangi kitab-ı* oku-du-n?
which book-acc read-pst-2sg
'Which book did you read?'

b. **Hangi kitap* oku-du-n?
which book read-pst-2sg

Once Pesetsky's account of the semantics of such WH-phrases has been adopted, nothing seems to be surprising about Turkish *which-phrases* having to carry case morphology in the DO position. If, as suggested by Pesetsky, *hangi kitap* 'which book' receives a D-linked reading, which can be paraphrased as 'which of the books', then it is a covert partitive and, therefore, it has to bear case morphology if it functions as a DO. However, Pesetsky's account seems to be doubtful in the light of examples like the following:

(36) Sen-i hiç öylesine dalmış gör-me-miş-ti-m. *Hangi kitab-ı* /
you-acc never so absorbed see-neg-pst-pst-1sg which book-acc
**hangi kitap* oku-yor-du-n.
which book read-prog-pst-2sg
'I had never seen you so absorbed. What book were you reading?'

In order for the two sentences in this example to constitute an acceptable piece of discourse, it is not necessary for the range of felicitous answers to the question to be delimited by a set of books both the speaker and hearer have in mind. On the contrary, the most natural reading of the question requires this set to potentially include an infinite number of books. That is, the *which*-phrase is non-D-linked. However, even on this reading, it demands case morphology in the DO position. Therefore, an account based on partitive-specificity would not be able to capture all instances of the use of accusative morphology with Turkish DO *which*-phrases. Although we

aim to analyze neither questions in general nor *which*-phrases in particular, we find it worth noting that a more promising attempt to account for why *which*-phrases in Turkish must be overtly case marked in the DO position could be to approach the matter in terms of *epistemic specificity*. Let us briefly explain what we mean by this term.

Roughly, we will consider an NP to be epistemically specific if and only if its referent is fixed in mind. In other words, an NP will be treated as epistemically specific if and only if its referent is *rigidly designated* (with respect to a certain mental state). Kripke (1972) characterizes *rigid designation* by having recourse to the notion of *possible worlds*:[4] Something is a *rigid designator* if in any possible world it designates the same object, it is a *non-rigid* or *accidental designator* if that is not the case. If, for example, we use the description 'the greatest man who studies under Plato' to *rigidly designate* or *fix the referent*, then that man, who is Aristotle, will be the intended referent in all possible worlds. The description will have been used to pick out to which man we mean to refer.[5]

Now, tentatively speaking, what distinguishes *which*-phrases from others seems to be the fact that, unlike the other WH-phrases, their use requires the answer to rigidly designate the questioned object. That is, the answer has to provide the identity of the questioned object, not a mere description of it. Suppose that each of the utterances below is an answer to the question in (36):

(37) Savaş ve Barış-ı.
war and peace-acc
'War and Peace.'

(38) Bir roman-ı / bir roman.
one novel-acc one novel

[4]It would take us too far to review the long philosophical debate about possible worlds as a basis of semantics. However, in order to avoid confusion, we find it useful to call attention to a point made by Kripke. Kripke stresses that a possible world is not something, for example, that can be seen with a telescope and he adds: "A possible world is *given by the descriptive conditions we associate with it.* What do we mean when we say 'In some other possible worlds I might not have given this lecture today'? We just imagine the situation where I didn't decide to give this lecture or decided to give it on some other day" (1972, p. 267). The reader is referred to the articles in Copi & Gould (1967) for a survey of the issue of possible worlds.

[5]We should note that the use of a (definite or indefinite) description as a rigid designator is an issue of pragmatic reference. Following Kripke (1972, 1977), we hold the view that the distinctions relating to the status of descriptions in terms of epistemic specificity or rigid designation need not be recorded in the lexicon. We believe that such distinctions have little to do with semantic reference or that they do not arise in the lexicon, but in the contexts where descriptions are used later on.

'A novel.'

(37) will be an entirely felicitous answer. But, the utterance of (38) will yield a certain oddity. It will sound as if the speaker does not want to be cooperative, because s/he does not give as much information as required (cf. Gricean maxims of conversation). More specifically, the information s/he provides falls short of revealing the token-identity of the book. Therefore, the querier will be totally entitled to continue the conversation with the following question:

(39) Tamam ama, hangi roman-ı?
O.K. but which novel-acc
'O.K. but which novel?'

If, on the other hand, the question were something like:

(40) ... Ne oku-yor-du-n?
what read-prog-pst-2sg
'What were you reading?'

(37) and (38) will be both possibly felicitous answers.

The observation above suggests that *which*-phrases might be given a more satisfactory account in terms of epistemic specificity. Also, the necessity of morphologically marking Turkish *which*-phrases in the DO position seems to be accountable by having recourse to this notion. In the following subsections, we will look at some dichotomies that center around the idea of reference fixation or rigid designation and we will see how the status of NPs with respect to this criterion may bear relevance to the accusative marking of these NPs in the DO position of declarative sentences.

### 2.2.2 The *de dicto/de re* distinction

As Dowty et al. (1981) put it:

> Most systems of logic with an identity predicate contain a law (the so-called *Leibnitz' Law*) that the result of substituting in any formula one name for another name denoting the same individual results in a formula that is true if and only if the original formula was true. Thus to take a natural language example, the phrase *The Morning Star* denotes the

> same entity as the phrase *The Evening Star* (i.e. both denote the planet Venus), so the sentence *The Morning Star is not visible now* is true just in case the sentence *The Evening Star is not visible now* is true. (p. 142)

However, Leibnitz' Law does not always hold. For example, a sentence like (41) can be true without necessitating the truth of a sentence like (42):

(41) John believes that the Morning Star is the planet Venus.

(42) John believes that the Evening Star is the planet Venus.

Constructions for which Leibnitz' Law does not hold are called *intensional constructions*. Such constructions are said to create *opaque* or *oblique* contexts, as opposed to *transparent* ones (for which Leibnitz' Law holds). Among them are constructions with verbs expressing *propositional attitudes* (e.g. *to believe, to know*) or expressing *intentions* (e.g. *quotation, indirect speech, temporal designation* and *modality*) (cf. L.T.F Gamut (1991), Vol.2).

Opacity-creating constructions can give rise to an ambiguity between the so-called *de re* and *de dicto* interpretations of a noun phrase. For example, (43) involves this ambiguity with respect to the NP *Miss America*.

(43) John believes that *Miss America* is bald.

Dowty, Wall & Peters (1981) characterize it as follows. On the *de re* reading, this example asserts "that John has a belief about a certain individual who happens to be Miss America at the 'current' index, the belief being that this individual is bald. On this reading the example could describe a true belief of John's about a certain person even if John does not know that she is Miss America, does not know any name for that individual, or is mistaken about her name" (p. 166).[6] The *de dicto* reading, on the other hand, is "the one in which John believes that whoever is named by the name *Miss America* is bald, and on this reading the sentence can describe a belief of John's even though he does not know which individual the name actually denotes and thus there is no specific person *of whom* he can be said to hold any such belief." They formalize these two readings in Montague's intensional logic as (44) and (45) (where *Bel, B, J*, and *m* stand for *believe, bald, John*, and *Miss*

[6] An index is described as a pair, <w,t>, for some w in the set of worlds and t in the set of times. The 'current' index represents 'the actual world now'.

*America* respectively and ^ denotes the intensional operator that serves to form the intension of the expression within its scope).

(44) $\lambda x[Bel(j, \hat{}[B(x)])](m)$. (*de re*)

(45) $Bel(j, \hat{}[B(m)])$. (*de dicto*)

The *de re* or specific reading is represented by a formula where m is outside the scope of the opaque-context creating operator ^ , while the *de dicto* or nonspecific reading is represented by a formula where *m* stands within the scope of that operator.

It would take us beyond the scope of this dissertation to go into every aspect of the phenomenon characterized by the *de re/de dicto* distinction. What is of particular interest for us is that a *de re* interpretation of a Turkish DO necessitates the use of accusative morphology. In other words, a case morphemeless DO is restricted to a *de dicto* interpretation in opaque contexts in Turkish. Consider the following pair of sentences:

(46) a. Oya Kaya-nın bir doktor-u öldür-düğ-ü-ne inan-ıyor.
Oya Kaya-gen3 one doctor-acc kill-ger-poss3-dat believe-prog
'Oya believes that Kaya killed a doctor.'

b. Oya Kaya-nın bir doktor öldür-düğ-ü-ne inan-ıyor.
Oya Kaya-gen3 one doctor kill-ger-poss3-dat believe-prog
'Oya believes that Kaya killed a doctor.'

Of these two sentences, only the (a) one can be used to describe Oya's mental state if her belief holds of a particular doctor. That is, only the (a) sentence will be felicitous in a case where the referent of the DO is rigidly designated in Oya's mind. Suppose that Ali is a doctor and that Oya said to the speaker that Kaya killed Ali. Now, assuming that the hearer does not know Ali, the speaker can convey what Oya said to him/her by uttering (46a). But, s/he cannot use (46b) to do the same thing, as this will undesirably entail that Oya's belief is not concerned with any particular doctor, but for it to be true it is sufficient for Kaya to have killed any doctor, irrespective of who that doctor was. If it turns out that Kaya killed Ayşe, who was a doctor, but not Ali, Oya's original belief will be wrong. But, in the same situation, the belief ascribed to Oya by (46b) will be true. It is also worth noting that the DO in (69a) need not be partitive. (69a) can be a discourse-initial utterance with no familiar set of doctors. As long as the referent is fixed, the DO will have to carry morphology.

Before moving on, we would like to call attention to a point about the characterization of the *de dicto/de re* dichotomy. The characterization given above seems to embrace two distinctions: One is the distinction that is the subject matter of this section, namely, whether or not the subject of the opacity inducing verb has a particular object in mind satisfying the provided description; the other is a scopal distinction, namely, whether or not the NP falls within the scope of the intensional operator (or, more precisely, whether or not the NP is referentially dependent on the subject's mental state). It is often assumed that a formal treatment like the one in (44) and (45) can deal with both of these distinctions. However, there have also been objections to an assimilation of this kind. For instance, Ioup (1977) argues that an indefinite NP may have a certain (epistemically) specific reading that does not entail the existence of the described object:

(47) Alberta believes that *a dragon* ate her petunias.

It may be the case that Alberta holds a belief about a particular dragon, though the utterer of this sentence does not believe that dragons exist. This is a non-transparent reading, where the dragon in question is fixed with respect to the subject's mental state, not the speaker's.

What is of particular interest is that such non-transparent but epistemically specific readings interact with the use of the accusative suffix in Turkish in the same way as existence-entailing specific readings. In examples like (46) the obligatory use of the accusative suffix is not contingent whether the speaker knows the referent of the DO or whether s/he accepts the existence of such a referent. As long as the reported belief holds of a particular individual (playing the objective role), the DO will be marked by the accusative suffix. For example, if Oya believes that Kaya killed a particular unicorn, a unicorn which she thinks she can identify, it is (48a), but not (48b), that will be used to report that belief, even if the speaker does not believe that unicorns exist:

(48) a. Oya Kaya-nın bir yunikorn-u öldür-düğ̈-ü-ne inan-ıyor.
Oya Kaya-gen3 one unicorn-acc kill-ger-poss3-dat believe-prog
'Oya believes that Kaya killed a unicorn.'

b. Oya Kaya-nın bir yunikorn öldür-düğ̈-ü-ne inan-ıyor.
Oya Kaya-gen3 one unicorn kill-ger-poss3-dat believe-prog
'Oya believes that Kaya killed a unicorn.'

It follows that in opaque contexts a Turkish DO has to carry the accusative suffix, *-yI*, whenever its referent is fixed with respect to the mental state described by the utterance, regardless of whether the speaker presupposes the actual existence of that referent.

The (epistemically) specific/non-specific distinction is easily noticeable in opaque contexts. Nonetheless, it is argued that the same kind of distinction is also detectable in non-opaque environments. Below, we will have a look at a specificity-related distinction which is argued to show up in transparent contexts and the interaction of that distinction with accusative marking in Turkish.

### 2.2.3 The referential/attributive distinction

**Referential and attributive uses of definites:**

Donnellan (1966) distinguishes two uses of definite descriptions, the referential and the attributive, which can be detected even in non-opaque contexts. This distinction bears on epistemic specificity to a great extent. While in the referential use of a definite description the referents needs to be fixed, in the attributive use of a definite description the rigid designation of the referent is totally out of question.

The essence of what Donnellan means by his distinction can be found in the following quote.

> I will call the two uses of definite descriptions I have in mind the attributive use and the referential use. A speaker who uses a definite description attributively in an assertion states something about whoever or whatever is the so-and-so. A speaker who uses a definite description referentially in an assertion, on the other hand, uses the description to enable his audience to pick out whom or what he is talking about and states something about that person or thing. In the first case the definite description might be said to occur essentially, for the speaker wishes to assert something about whatever or whoever fits that description; but in the referential use the definite description is merely one tool for doing a certain job —calling attention to a person or thing— and in general any other device for doing the same job, another description or a name, would do as well. In the attributive use, the attribute of being so-and-so is all important, while it is not in the referential use. (Donnellan 1966:285).

A well-known example he presents to illustrate the two uses is the sentence below.

(49) Smith's murderer is insane.

Suppose first that the speaker comes upon Smith foully murdered. Because of the brutal manner of the killing and of the fact that Smith was the most lovable person in the world, s/he might exclaim "Smith's murderer is insane". Suppose further that the speaker does not know who murdered Smith (though, Donnellan notes, this assumption is not in the end essential to the case, and it is just intended to make the case simple). This is an attributive use of the definite description. In this case, the identification of the person who murdered Smith is entirely irrelevant to the communicative purposes of the particular utterance. What is brought to the foreground by the definite NP is the attribute of being Smith's murderer, which is all important in the given context because the utterance is about **whoever** bears this attribute.

Donnellan contrasts the above use of the definite description in (49) with a use in which the speaker has a particular individual in mind when s/he speaks of Smith's murderer and s/he expects and intends his/her audience to pick out this individual, as the person about whom s/he is going to say something. An occasion of this latter use of the definite description in question can be induced by a scenario like the following. Suppose now that Jones has been charged with Smith's murder and has been placed on trial. In a discussion of Jones' odd behaviour at this trial, the speaker can express his/her impression of Jones' such behaviour by saying "Smith's murderer is insane". The speaker's purpose in using the definite description here is to draw the audience's attention to the particular person s/he is going to say something about, namely Jones. The achievement of this purpose is essential for the overall communicative purpose of the utterance. This is a referential use of the definite description.

**Referential and attributive uses of indefinites:**

It is widely acknowledged in the literature that the distinction between a referential use and an attributive one applies also to indefinites (cf. Partee 1972; Rouchota 1992, 1994; inter alia). Partee (1972) argues that as in the case of definites the ambiguity between referential and attributive indefinites is independent of any kinds of opacity. According to her, what opaque contexts do is just make particularly significant an ambiguity which is actually present in a much broader range of cases. To give an example, the following sentence

(50) John married *a girl his parents didn't approve of.*

can display an ambiguity that is parallel to the ambiguity the sentence

(51) John would like to marry *a girl his parents don't approve of.*

would display in terms of the referential/attributive distinction.[7] Partee claims that sentence (50) can be used as a report of success with an ambiguity that can easily be detected in 'John succeeded in marrying *a girl his parents didn't approve of*' and that can be characterized as 'he succeeded in marrying *that girl*' or he 'he succeeded in marrying *such a girl*'.[8]

Partee makes a further point about the referential/attributive distinction in general: "The prominence of one or the other reading appears to depend on the relation between the significance of the description used in the noun phrases and whatever else is asserted in the sentence". For her, the italicized noun phrases in the following sentences are most likely to be interpreted referentially, as they can much more easily be thought of as being used to 'name' a particular individual with their descriptive content having no particularly strong semantic relation to the content of the rest of the sentence.

(52) John is dating *a girl from Alabama that he met several summers ago.*

(53) We left the dog tied to *the back fence.*

"In the non-referential, or attributive, use of a noun phrase, the concern is not with naming a particular object but giving descriptive characteristics which are semantically significant as part of the content of the sentence". Consider (54).

(54) Since I heard that from *a doctor*, I'm inclined to take it seriously.

[7]Partee describes the two readings of sentence (51) as follows: "Informally, we can say that in one case John has a particular girl in mind to marry, and the fact that his parents don't approve of her is descriptive information about that girl; in the other case, no particular girl is meant and it might even be the case that no such girl exists —here having the disapproval of his parents is not a description of a particular girl whose hand John is seeking but an attribute John will consider in his wife-hunting" (p.415).

[8]Partee believes that this ambiguity is not dependent on whether philosophers would typically regard *succeed in* as setting an opaque context or not, as (50) would surely not be regarded as opaque.

The italicised noun phrase here seems unambiguously attributive, as one of the most natural implications deriving from the sentence is that whatever it was that the speaker heard was something to which the special competence of doctors is relevant.

**The referential/attributive distinction and accusative marking in Turkish**

When a Turkish DO receives referential interpretation, it necessarily carries case morphology, whether it is partitive or not. As definites are also partitives (cf. Section 2.1.2), we can only use indefinite descriptions to substantiate this claim. Moreover, in order to show that it is really referentiality that necessitates the use of accusative morphology we must rest our argument on the observations of non-partitive indefinites.

Fodor & Sag (1982) present several factors that favour a referential interpretation of an indefinite. One of them is descriptive richness. They argue that descriptively rich indefinites are more likely to be understood referentially than descriptively vague ones. For instance, according to them, the lengthy description renders the indefinite in (55) very likely to be interpreted referentially. The vague *someone* in (56), on the other hand, is more likely to receive a quantifier interpretation, unless the context of use provides considerable knowledge about the object it possibly picks out.

(55) *A student that Betty used to know in Arkansas* cheated on the exam.

(56) *Someone* cheated on the exam.

In fact, descriptive richness favours also the use of the accusative suffix on indefinites in the DO position in Turkish. Suppose that the following sentences are uttered in a context where there is no familiar apple or set of apples to which the apple picked out by the DO in each sentence could be linked. That is, the NPs are assumed to evoke entities that are entirely unfamiliar. The utterance of (57a) would be perfectly acceptable, whereas that of (57b) would sound odd.[9]

(57) a. Kaya *bir elma* yi-yor-muş.
Kaya one apple eat-prog-pst
'Kaya was eating an apple.'

b. ?Kaya *bir elma-yı* yi-yor-muş.
Kaya one apple eat-prog-pst

[9]An explanation of this contrast is offered in Section 3.2.

However, if we enrich the content of the DOs, the judgments about the use of the accusative suffix tend to be reversed:

(58) a. #Kaya *yarı-sı* *çürümüş oldukça kırmızı bir elma* yi-yor-muş.
Kaya half-poss3 rotten fairly red one apple eat-prog-pst

b. Kaya *yarı-sı* *çürümüş oldukça kırmızı bir elma-yı* yi-yor-muş.
Kaya half-poss3 rotten fairly red one apple eat-prog-pst
'Kaya was eating a half rotten fairly red apple.'

Of these two sentences, it is (58b) (i.e. the one whose DO bears case morphology) that sounds entirely fine when interpreted out of the blue. Sentence (58a) is marked (which is indicated by '#') in the sense that its context of use would be much more restricted than that of (58a).

What does it mean for a certain linguistic form to favour a certain reading? For us, it just means that the range of contexts where that reading can arise is wider than the range of contexts where the other (i.e. non-favoured) reading can arise. From this point of view, there is nothing surprising about the fact that in Turkish descriptively rich DOs sound more natural when they are used with the accusative suffix, *-(y)I*. That is the case because the use of this suffix becomes obligatory when a DO receives a referential (i.e. epistemically specific) interpretation.

Further evidence supporting the claim that the use of the accusative suffix is obligatory when a DO receives a referential interpretation can be obtained by examining the reading which the marked sentence in (58a) can receive. This sentence can only receive a reading where the attribute of being a half-rotten fairly red apple comes to the fore, with the specificity of the apple bearing this attribute being totally irrelevant. The sentence can obtain this interpretation, for example, when it is used as an answer to (the Turkish counterpart of) a question like 'What kind of food was Kaya eating?'.

Let us look at more examples showing that the lack of case morphology in the DO position necessarily implies an attributive or epistemically non-specific interpretation for an indefinite occupying this position. Consider the sentence below:

(59) Arkadaş-ı Oya-yla *Kaya adlı* *bir adam* sev-iyor diye
friend-poss3 Oya-inst Kaya named one man love-prog because
dalga geç-iyor.
make.fun
'Her friend is making fun of Oya since she loves a man called 'Kaya".

The italicized NP in this sentence is restricted to an attributive interpretation. This sentence necessarily means that Oya's friend is making fun of her because the man she loves is called Kaya. That is, in any possible interpretation of this sentence the attribute of being called Kaya will be an essential component of the message intended to be conveyed to the hearer. A possible continuation of (59) could be:

(60) Bu ad-ın çok komik ol-duğ-u-nu düşün-üyor.
this name-gen3 very funny be-ger-poss3-acc think-prog
'He thinks that this name is very funny.'

but not:

(61) Adam-ın ad-ı Kaya ol-duğ-u için değil. Adam-ın
man-gen3 name-poss3 Kaya be-ger-poss3 because not man-gen3
kendisi-ni komik bul-uyor.
himself-acc funny find-prog
'... not because the man's name is Kaya. He finds the man himself funny.'

Someone uttering this sentence after (59) would contradict himself, as the linguistic form used in the latter signals the importance of the attribute of being called Kaya for the understanding of the entire statement but the utterance following it just denies this importance. It is noteworthy that (61) would be an entirely coherent continuation to sentence (59) if the italicized DO bore the accusative suffix, since this would allow for a referential interpretation of the DO.

Now, take the following pair of sentences:

(62) a. Kaya *Fido adlı bir köpek* öldür-düğ-ü için idam
Kaya Fido named one dog kill-ger-poss3 because execution
ed-il-di.
do-pass-pst
'Kaya was executed because he killed a dog named Fido.'

b. Kaya *Fido adlı bir köpeğ-i* öldür-düğ-ü için idam
Kaya Fido named one dog-acc kill-ger-poss3 because execution
ed-il-di.
do-pass-pst
'Kaya was executed because he killed a dog named Fido.'

Consider a hypothetical country where killing a **particular** dog named Fido requires execution. Suppose also that Kaya killed that particular dog and, for that reason,

he was executed in that country. In such circumstances, only the (b) sentence would be appropriate to describe the states of affairs in question. The (a) sentence, where the italicized DO does not carry case morphology, would be felicitously used, for instance, in a country where killing **any** dog with the name of Fido requires execution. This is because the lack of case morphology makes it impossible to interpret the DO referentially (i.e. with a rigidly designated referent).

## 2.3 Strong quantification

### 2.3.1 Classification of quantifiers

Milsark (1974) distinguishes two types of determiners which he calls *strong* and *weak*. He proposes a syntactic diagnostic for this classification: weak determiners can appear with a subject in *existential sentences*, whereas strong determiners cannot. According to Milsark, the determiners *a, some, a few, many*, and the numerals such as *three* are all weak determiners and *the, every, each, all* and *most* are strong determiners. As the following example (adopted from Diesing 1992) illustrates, the diagnostic he proposes seems to justify this classification:

(63) a. There (is/are) (a/some/a few/many/three) (fly/flies) in my soup.

b. *There (is/are) (the/every/each/all/most) (fly/flies) in my soup.

We should note that Milsark makes a distinction between two kinds of *there*-sentences and reserves the term *existential sentence* to designate only one of them: "all and only those English sentences in which there appears an occurrence of the unstressed, non-deictic, 'existential' *there*" (p. 9). He notes that untold confusion can result from confusing such purely existential sentences with sentence like the ones in (64)-(66), i.e. those that contain the deictic adverbial *there*.

(64) There's your shoe: over on the refrigerator where you left it.

(65) There is John, over there.

(66) There's a pretty kettle of fish.

Though they are superficially similar to existential sentences, such sentences occur in particular contexts and are characterized by distinctive intonation.

Rando & Napoli (1978) propose an apparently different axis along which existential *there*-sentences are contrasted with some class of non-existential *there*-sentences. They claim that *there*-sentences in English can be either *existential* or *list* sentences and that only the latter accept both definites and indefinites. Moreover, they argue that list sentences "have the intonation of a list – which may be either partial (in which case the intonation rises at the end) or complete (in which case the intonation falls at the end)" and often occur as answers to questions like the ones in the following examples:

(67) Q. How could we get there?

A. Well, there's the trolley ...

(68) Q. What's worth visiting here?

A. There's the park, a very nice restaurant, and the library. That's all as far as I'm concerned.

(69) Q. Who all has been in this room since closing time?

A. There's only the night-watchman.

Having touched upon the difference between existential *there*-sentences and non-existential ones, we would like to call attention to an hierarchy of quantifiers proposed by Ioup (1975). Ioup points out that quantifiers may differ in the scope preferences they display. While some quantifiers show preference for wider scope, the others tend to have narrow scope. Ioup represents the varying scope preferences among quantifiers in the form of a hierarchy, where the leftmost elements show the greatest preference for wider scope, and the rightmost elements show the greatest preference for narrower scope:

(70) each > every > all > most > many > several > some > a few

Diesing (1992) points out that Ioup's hierarchy "bears an interesting relationship to Milsark's classification. If the hierarchy in [70] is bisected, the quantifiers in the left-hand half (those tending toward wider scope) all fall into the class of strong determiners, and those in the right-hand half (those tending toward narrower scope) all fall into the class of weak quantifiers" (p. 64). In the ensuing subsection, we will look at the interaction between the weak/strong classification of quantifiers and accusative marking in Turkish.

### 2.3.2 Strong quantification and accusative marking in Turkish

Enç (1991) notes that universally quantified NPs in Turkish require accusative morphology in the DO position. If this requirement is not met, the result is total unacceptability, as shown in the following examples (Enç's (30) and (31)):

(71) a. Ali her kitab-ı oku-du.
Ali every book-acc read-pst
'Ali read every book.'

b. *Ali her kitap oku-du.

(72) a. Doktor her hasta-yı muayene et-ti.
doctor every patient-acc examine-pst
'The doctor examined every patient.'

b. *Doktor her hasta muayene et-ti.

Enç argues that the obligatory accusative marking of universally quantified DOs in Turkish stems from their being covert partitives. She holds the view that universal quantifiers in natural languages quantify over contextually given sets, where *contextually given* means 'previously established in the discourse'. Resting on this view, we can consider (73) as equivalent to (74) with the overt partitive. "[73] does not entail that Sally danced with every man on earth, only that she danced with every contextually relevant man" (p. 11).

(73) Sally danced with every man.

(74) Sally danced with every one of the men.

As, according to Enç, universal quantification is over sets of individuals already established in the discourse, NPs that quantify universally are partitive-specific, and therefore, they have to carry case morphology in the DO position in Turkish.

Although this line of reasoning seems to work quite well for examples like (73), the same clarity does not apply, for instance, to *generic* sentences, i.e. those sentences that do not express specific episodes or isolated facts, but instead report a generalization over specific events or facts (cf. Krifka et al. 1995). For example, one can make a generalization like:

(75) God loves *every man.*

without any set of men that is contextually given. On the contrary, the claim made in this sentence applies to every man on earth. It is also interesting to note that in the Turkish translation of sentence (75), the universally quantified DO has to take the accusative suffix, though the set quantified over is not necessarily contextually restricted:

(76) a. Tanrı *her insan-ı* sev-er.
God every man-acc love-aor
'God loves every man.'

b. *Tanrı *her insan* sev-er.

In fact, in Turkish all strongly quantified DOs must carry case morphology. The violation of this constraint results in ungrammaticality, as shown below:

(77) a. Oya *her öğrenci-yi / bütün öğrenci-ler-i / çoğu öğrenci-yi*
Oya every student-acc all student-pl-acc most student-acc
sev-er.
like-aor
'Oya likes every student / all students / most students.'

b. Oya **her öğrenci / *bütün öğrenci-ler / *çoğu öğrenci* sev-er.

The contrast between (77a) and (77b) has nothing to do with whether the quantified set of men is restricted or not. In both cases, (77a) will be acceptable, and (77b) unacceptable.

We should also note that the obligation in question (i.e. that strongly quantified DOs must be overtly case marked in Turkish) is not contingent on reference fixation either. Let us slightly modify Donnellan's famous example and assume that there is more than one person responsible for the murder of Smith. In such a context,

(78) The police caught every murderer in a short time.

may be interpreted in two different ways. As a first scenario, suppose that the murderers of Smith are Jones, John and Mary. The utterer of (78) may be talking about these particular individuals, wishing that the hearer will recognise his/her intention. In that case, the proposition expressed by (78) will be the same as that expressed by:

(79) The police caught Jones, John and Mary in a short time.

As a second scenario, it may be the case that the speaker does not know who murdered Smith and that s/he is not concerned with this question either. But, knowing that Smith was murdered by more than one person, s/he just wants to assert that all these murderers, whoever they are, were caught by the police in a short time.

Crucially, if the speaker wanted to convey his/her message in Turkish, s/he would have to use sentence (80a) in each of the two scenarios. (80b) would not be acceptable in either of the scenarios.

(80) a. Polis kısa sürede *her katil-i* yakala-dı.
Police short time-loc every murderer-acc catch-pst
'The police caught every murderer in a short time.'

b. *Polis kısa sürede *her katil* yakala-dı.
police short time-loc every murderer catch-pst

One last point to note is that weak quantifiers do not impose any restriction on the use of case morphology in the DO position of Turkish sentences. The DOs in the following examples can appear either with or without case morphology, at least when the sentences are interpreted in isolation:

(81) Oya *birçok öğrenci-yi / birçok öğrenci* sev-er.
Oya many student-acc many student like-aor
'Oya likes many students.'

(82) Oya *birkaç öğrenci-yi / birkaç öğrenci* sev-er.
Oya some student-acc some student like-aor
'Oya likes some students.'

## 2.4 Kind-level reference

### 2.4.1 Kind-referring vs. object-referring NPs

Another distinction that divides the interpretations of NPs into two groups is between kind-referring and object-referring NPs. The NPs whose interpretations we discussed in the examples in the preceding sections were all object-referring. When

we used them, we were necessarily 'talking about' some objects, irrespective of whether or not these objects were fixed in mind. A kind-referring NP does not refer to an 'ordinary' individual or object, but instead refers to a kind, as exemplified in (83).[10]

(83) a. *The potato* was first cultivated in South America.

b. *Potatoes* were introduced into Ireland by the end of the 17th century.

c. The Irish economy became dependent upon *the potato.*

As Krifka et al (1995) point out, the italicized NPs above do not denote or designate some potato or group of potatoes, but rather the kind Potato (*Solanum tuberosum*) itself. Thus, they are all *kind-referring* or *generic* NPs.

Krifka et al make a further distinction between *nontaxonomic* and *taxonomic* kind-referring NPs. In English, nontaxonomic kind-referring NPs are typically definite singular NPs (e.g. *the potato* in (83a) and (83c)), bare plurals (e.g. *potatoes* in (83b)), bare mass terms (e.g. *gold* in (84a)), or proper names (e.g. *Solanum tuberosum* in (84b)).

(84) a. *Gold* has the atomic number 79.

b. *Solanum tuberosum* contains vitamin C, amino acids, protein and thiamine.

In addition, Krifka et al note, "count nouns, and mass nouns like *metal* in a 'secondary' count noun reading, can denote subspecies in a taxonomic hierarchy. In this *taxonomic* reading, they clearly have to be analyzed as kind denoting, even they appear as indefinite singular NPs" (p. 5):

(85) a. The World Wildlife Organization decided to protect *a (certain) large cat*, namely the Siberian tiger.

b. *One metal*, namely copper, went strongly up on the market yesterday.

In what follows we will see whether the kind reference/object reference distinction bears any relevance to the interaction of accusative marking in Turkish with the previously introduced distinctions. But, before moving on, we want to call attention

[10]The data and discussion presented in this subsection are entirely based on Krifka et al. (1995).

to a point made by Krifka et al with a special emphasis. "In the history both of philosophy of language and of linguistics, there have been two quite distinct phenomena that have been referred to or classified as 'genericity' ": *reference to a kind* and *reporting a generalization.* The first notion of genericity is a feature of NPs, whereas the second notion of genericity is a feature of the whole sentence (or clause), rather than of any one NP in it. Though they are different, generic NPs and generic sentences have something in common: with the former we abstract away from particular objects, whereas with the latter we abstract away from particular events and facts. Furthermore, both phenomena, generic NPs and generic sentences can occur combined in a single sentence, as exemplified in (84).

### 2.4.2 Kind-level reference and accusative marking in Turkish

Below, we will show that the constraints imposed on the accusative marking of DOs in Turkish are indifferent to whether the reference is on the kind or object level. That is, provided that a Turkish NP receives a definite, partitive-indefinite, epistemically specific or strongly quantified reading (i.e. a strong reading), it will have to carry the accusative suffix, *-(y)I*, in the DO position, irrespective of whether it is kind or object referring.

#### Nontaxonomic kind-referring NPs

As Prince (1988) points out, a minimal condition on a normal felicitous use of a generic NP is that the kind it denotes must be a hearer-old entity, an entity uniquely identified in the set of objects shared by the speaker and hearer. This is a prerequisite to knowing the meaning of such NPs. It follows that (nontaxonomic) generic NPs are definite.[11] Therefore, we should expect them to always require case morphology in the DO position of Turkish sentences. Let us see if this is the case.

[11] At this point, it seems worth calling attention to a distinction made by Prince (1988). prince distinguishes between definiteness as a formal property of NPs and definiteness as a conceptual property of entities in a discourse model and proposes to call the latter **informational definiteness**. "Formal definiteness pertains to the marking of the NP as definite or indefinite in those languages like English which have such a marking" (e.g. (unmodified) proper nouns, personal and demonstrative pronouns, NPs marked with the definite article, demonstrative pronouns, NPs marked with the definite article, demonstrative articles, or possessive adjectives). As for definiteness in the second sense (i.e. informational definiteness), it is the assessment of the information-status of a discourse entity with respect to either the hearer's head or the discourse model. From this point of view, all nontaxonomic kind-referring NPs can be considered as informationally definite even though they are not all formally marked as definite.

There are some NPs which can only be interpreted as kind-referring. Krifka et al exemplify such NPs with the English NP (not the common noun) *man* (as in '*Man* has lived in Africa for more than 2 million years') and with NPs like *this kind of tiger* and *each species of fish*. The following example illustrates that when a Turkish NP has a lexical form that explicitly renders it kind referring, it has to carry the accusative suffix in the DO position. The NP *insanoğlu* is the Turkish counterpart of the English NP *man*.

(86) a. Hayvan-lar-ı sev-me-yen *insanoğlu-nu / insan soyu-nu*
animal-pl-acc love-neg-rel.part man-acc man species-poss3-acc
sev-e-mez.
love-able-neg
'One who does not love animals cannot love man / the human species.'

b. Hayvan-lar-ı sev-me-yen **insanoğlu / *insan soyu* sev-e-mez.

If the italicized NPs in the above example had a lexical form that is neutral with respect to the kind reference/object reference distinction, it could appear either with or without case morphology:

(87) a. Hayvan-lar-ı sev-me-yen *insan-ı* sev-e-mez.
animal-pl-acc love-neg-rel.part man-acc love-able-neg
'One who does not love animals cannot love man / the man.'

b. Hayvan-lar-ı sev-me-yen *insan* sev-e-mez.
animal-pl-acc love-neg-rel.part man love-able-neg
'One who does not love animals cannot love someone/people.'

There is another way of ensuring that a given NP is kind-referring. A certain argument of some verbs can only be a kind referring NP. Examples are the subject argument of *die out* or *be extinct* and the object argument of *invent* or *exterminate*. As Krifka et al note, the reason is simple: "only kind (not objects) can die out or be invented". The Turkish verb *bul-* displays an ambiguity between a sense that is translated as 'to find (some object)' and another one that is translated as 'to invent (some kind of object)'. As the following example shows, the latter reading can be obtained only with a DO carrying accusative morphology:

(88) a. Edison *elektrik ampül-ü-nü* bul-du.
Edison electric bulb-poss3-acc invent-pst
'Edison invented the electric bulb.'

b. Edison *elektrik ampül-ü* bul-du.
Edison electric bulb-poss3 find-pst
'Edison found an electric bulb/electric bulbs.'

Given our factual world knowledge, the reading that comes to mind first for sentence (88a) is the one given in the relevant translation (the reading in which *bul-du* is translated as 'invented' and, accordingly, the DO receives a kind-referring reading), though this sentence could also be interpreted as: Edison found a particular bulb in a certain place. Sentence (88b) is restricted to this second reading, as a direct result of the fact that its DO lacks accusative case morphology.

**Taxonomic kind-referring NPs**

Even if a kind-referring Turkish NP is indefinite, like object referring NPs if it is partitive it must carry the accusative suffix in the DO position. Consider the sentences below, where (90a) and (90b) are two possible continuations of (89). All the italicized NPs in the examples of this section are supposed to be kind-referring.

(89) Bu yaz, hayvanat bahçesi-nde *yedi farklı hayvan* sergile-yecek-ler.
this summer zoo-loc seven different animal display-fut-pl

'This summer, they will display seven different animals in the zoo.'

(90) a. Ben yalnızca *bir hayvan-ı* gör-mek isti-yor-um.
I only one animal-acc see-ger want-prog-1sg
'I only want to see *one animal/one of the animals.*'

b. Ben yalnızca *bir hayvan* gör-mek isti-yor-um.
I only one animal see-ger want-prog-1sg
'I only want to see only *one/a (non-specific) animal.*'

If the speaker wants to see one of the animals that will be displayed in the zoo this summer, s/he can convey this intention only with (90a). (90b) can only be uttered in a case where the kind of animal the speaker wants to see is not necessarily one of the kinds of animal that will be displayed, but rather any kind of animal.

Similarly, when a kind-referring NP is epistemically specific (i.e. its reference is fixed to a certain kind), it requires case morphology in the DO position even if it is indefinite. Suppose that (91) is uttered by Oya. Of the two sentences in (92) only the (a) one (i.e. the one with a DO bearing the accusative suffix) could be considered to be appropriately reporting what Oya said.

(91) Bu yaz hayvanat bahçesi-nde *koala-yı* sergile-yecek-ler.
this summer zoo-loc koala-acc display-fut-3pl
'This summer, they will display *the koala* in the zoo.'

(92) a. Oya bu yaz hayvanat bahçesi-nde *bir hayvan-ı*
Oya this summer zoo-loc one animal-acc
sergile-yecek-ler-i-ni söyle-di.
display-fut-3pl say-pst
'Oya said that they would display *an animal* in the zoo this summer.'

b. Oya bu yaz hayvanat bahçesi-nde *bir hayvan*
Oya this summer zoo-loc one animal
sergile-yecek-ler-i-ni söyle-di.
display-fut-3pl say-pst
'Oya said that they would display *a (non-specific) animal* in the zoo this summer.'

Finally, strongly quantified kind-referring NPs must carry the accusative suffix when they function as DOs, whereas weakly quantified ones are neutral in that respect:

(93) a. Bu yaz hayvanat bahçesi-nde *her hayvan-ı / bütün*
this summer zoo-loc every animal-acc all
*hayvan-lar-ı / çoğu hayvan-ı* sergile-yecek-ler.
animal-pl-acc most animal-acc display-fut-3pl
'This summer, they will display *every animal / all animals / most animals* in the zoo.'

b. Bu yaz hayvanat bahçesi-nde **her hayvan / *bütün hayvan-lar / *çoğu hayvan* sergile-yecek-ler.

(94) a. Bu yaz hayvanat bahçesi-nde *birçok hayvan-ı / birkaç*
this summer zoo-loc many animal-acc some
*hayvan-ı* sergile-yecek-ler.
animal-acc display-fut-3pl

b. Bu yaz hayvanat bahçesi-nde *birçok hayvan / birkaç hayvan*
this summer zoo-loc many animal some animal
sergile-yecek-ler.
display-fut-3pl
'This summer, they will display *many animal / some animals* in the zoo.'

## 2.5 Towards a unitary account

In the preceding sections we have provided a taxonomic account of the semantics of the Turkish accusative suffix, *-(y)I*. We have come up with a list of semantic conditions under which a Turkish DO has to carry this suffix. We will start our discussion in this section by showing that all these interpretations requiring case morphology in the DO position of Turkish sentences are barred from the post-verbal position of *existential*-there sentences in English. This will provide the syntactic reason behind their categorisation in a single group as strong readings. Afterwards, we will make a first attempt to find a unique semantic phenomenon underlying these interpretations.

### 2.5.1 The Definiteness Effect

The difference in naturalness that is displayed by NPs that can and cannot felicitously appear in post-verbal position in existential *there*-sentences usually has been termed the Definiteness Effect (or the Definiteness Restriction) (cf. Milsark 1974, 1977; Rando & Napoli 1978; Barwise & Cooper 1981; Lumsden 1988; inter alia). It is interesting to note that all those semantic cases that require case morphology in the DO position in Turkish create anomaly due to the Definiteness Effect in English. In Section 2.3, we saw that a strong quantifier brings about unacceptability when it appears without case morphology in the DO position of a Turkish sentence or when it occurs in the postverbal subject position of an English existential sentence. Below, we will show that English existential *there*-sentences also exclude NPs receiving definite, partitive or epistemically specific readings.

**Definiteness and the Definiteness Effect**

In order to avoid possible misunderstandings, we should first note that we do not use the term 'definite' for NPs that are barred from the subject position of existential sentences in English. We will retain this term for a more restricted range of NPs, namely those NPs that refer to the totality of some objects or mass in some shared set (cf. Section 2.1.3). We use the term Definiteness Effect as a mere label to refer to a certain phenomenon without any implication in terms of definiteness as already characterized in that section. Secondly, following Prince (1988) (cf. footnote 11), we find it useful to make a distinction between definiteness as a conceptual property of entities in a discourse model and definiteness as a formal property of NPs (until, at least, the semantics of the formal markers of definiteness, such as the definite article

*the*, is completely understood). This will provide a way to keep apart definite NPs that are clearly ruled out in a *there*-insertion context, such as the italicized ones in:[12]

(95) a. *There was *the dog* in the garden.

b. *There was *John* in the garden.

c. *There was *him* in the garden.

from NPs that are formally marked as definite but that felicitously occur in a *there*-insertion context, such as:

(96) a. There were *the same people* at both conferences.

b. There was *the most remarkable girl* at the party.

Milsark (1974) refers to such NPs as 'crypto-indefinites', by which he means "NP with overtly definite morphology, but whose definiteness in a semantic sense is somewhat open to question" (p. 18). Prince (1988) argues that what is required by *there*-sentences is not formal definiteness but hearer-newness (i.e. unfamiliarity to the hearer). "Thus, for example, *the same people* in the *there*-sentence in [96a], while formally definite, evokes an entity that is hearer-new: the hearer learns that some set of people were at one of the conferences and that some set of people were at the other conference and that the two sets were the same. This set of people, however, is presented as not already known to the hearer" (p. 10). In order to support this claim, she compares sentence (96a) with the sentence:

(97) *The same people* were at both conferences.

and argues that the latter sentence is ambiguous: "the set of people at both conferences may be some set not already identified to the hearer (hearer-new), or it may mean that some previously identified set of people (hearer-old) was also at both conferences". However (96a) is not ambiguous in that sense. This kind of reasoning is also applicable to sentence (96b). It seems that in order for this sentence to be

[12]The *there*-sentences given as examples in this section are assumed to be existential sentences, rather than demonstrative or list ones (cf. Section 2.3.1). Therefore, unless indication given to the contrary, judgments about acceptability should be understood to relate to existential rather than demonstrative or list interpretations.

felicitously uttered, the hearer must not have in mind an entity corresponding to the girl in question prior to the utterance (that is, the italicized NP must evoke a hearer-new entity). Obviously, on this reading, the italicized NP is like an indefinite: (96b) means about the same as (98).

(98) There was *a very remarkable girl* at the party.

Here, our main concern is not particular accounts of the felicitous occurrence of 'crypto-indefinites' in *there*-insertion contexts, but the fact that resting on a conceptual (but not formal) definiteness one can provide explanations for cases that do not otherwise seem to be explicable.

We saw in the preceding chapter that (nontaxonomic) kind-referring or generic NPs constitute another class of conceptually definite NPs and that they always demand case morphology in the DO position in Turkish. So, we should expect that such NPs are restricted in existential sentences. Before presenting some examples supporting this expectation, we will mention a distinction drawn between two types of predicates.

While some predicates allow only a generic reading for bare plurals (or indefinites) that co-occur with them, some others allow both a generic and an existential reading. Different labels have been used to call this distinction between the two types of predicates such as *state* predicates vs. *property* predicates (Milsark 1974), *stage-level* predicates vs. *object-* or *individual-level* predicates (Carlson 1977, 1982, Kratzer 1988, 1989, Diesing 1988, Wilkinson 1991) and *relations* vs. *types* (Glasbey 1998). For instance, sentence (99) has the stage-level predicate *arise*. Therefore, the bare plural 'hurricanes' can get both the generic and existential interpretation in appropriate contexts. But the same bare plural can get only the generic interpretation when it occurs in sentence (100), as *dangerous* is an individual-level predicate.[13]

(99) Hurricanes arise in the South Pacific.

(100) Hurricanes are dangerous in the South Pacific.

What makes the distinction between stage- and individual-level predicates relevant to our discussion is that *there*-insertion sentences are argued to be limited to stage-level predicates. Diesing (1992) illustrates this fact with the two groups of sentences

[13]It is noteworthy that the researchers concerned with the issue are not in complete agreement in the classification of predicates according to the distinction in question.

in (101) and (102). The predicates in the first group (i.e. *in the refrigerator, available, visible*) are all stage-level, whereas those in the second group (i.e. *nutritious, spicy, heavy*) are individual-level.

(101) a. There are carrots *in the refrigerator.*

b. There are chili peppers *available.*

c. There are pumpkins *visible* on the vine.

(102) a. *There are carrots *nutritious.*

b. *There are chili peppers *spicy.*

c. *There are pumpkins *heavy.*

We argue that a better characterization of the contrast exemplified by (101) and (102) can be given in terms of the generic/non-generic distinction (that applies to subject NPs), rather than the stage-level/individual-level distinction (that applies to predicate NPs). Consider example (103).

(103) In that era, there were dinosaurs living in forests.

*Live* is a stage-level predicate. Therefore, normally it is expected to admit both generic and existential interpretations. However, 'dinosaurs' in this sentence can only receive an existential reading. A generic or kind-referring interpretation of this NP is not available here. (103) contrasts with (104), where 'dinosaurs' can obtain both the existential and kind-referring reading:

(104) In that era, dinosaurs lived in forests.

These examples suggest that a kind-referring interpretation is not available for the subject of an existential sentence. If we confined ourselves to the distinction between stage-level and individual-level predicates, we would not be able to account for the difference between (103) and (104).

The exclusion of kind-referring NPs from the subject position of existential sentences is also noted by Lumsden (1988). After calling attention to the

> ... when concepts are employed, there is a working assumption that hearers are familiar with the concepts DOG, UNICORN, TREE, even though

> they may not be familiar with various instantiations of these kind-level entities. (Lumsden, 1988:158)

Lumsden argues that the only felicitous interpretation available for the subjects of the following sentences is the existential one:

(105) There are *unicorns.*

(106) There are *reptiles that are parthenogenetic.*

In other words, (105) and (106) will be interpreted in terms of instantiations of the kinds UNICORN and PARTHENOGENETIC REPTILE, respectively. "The interpretation will be that there is at least one instantiation corresponding to the appropriate kind-level entity."

Lumsden further notes that "if a generic was to be imposed on [a *there*-sentence] containing a bare plural or mass term, the context would almost certainly have to be a [list] one" (p. 159). He illustrates this fact with the following examples (from Hannay 1985), which the contexts show to be intended to have list interpretations:

(107) a. What kind of thing is counted in reams? [...]

b. Well, there's *paper* counted in reams, isn't there?

(108) a. What animals are only found in Africa and India?

b. Well, there's *elephants* for a start.

The italicized NPs in these examples can receive kind-referring interpretations. However, as they occur in list but not existential *there*-sentences, these cannot be taken as counter-examples to the claim that NPs that denote (conceptually) definite entities cannot be the arguments of existential *there*-sentences.

**Partitive-specificity and the Definiteness Effect**

Enç (1991) says that the NPs which she defines as nonspecific "are exactly those that are allowed to occur in existential sentences" (p. 14). Therefore, partitive-specifics (i.e. those NPs whose referents are included in (or identical with) a set of familiar entities) should be expected not to be able to appear as arguments of such constructions. Enç draws attention to the contrast between the two groups of sentences in (109) and (110) as evidence supporting this expectation:

(109) a. There are *some cows* in the backyard.

b. There are *two cows* in the backyard.

c. There aren't *any cows* in the backyard.

(110) a. *There are *some of the cows* in the backyard.

b. *There are *two of the cows* in the backyard.

c. *There aren't *any of the cows* in the backyard.

The determiners *some, two* and *any* are weak. Therefore, Enç notes, the difference in acceptability between (109) and (110) cannot be accounted for by appealing to the meaning of these determiners. The relevant difference between the italicized NPs in the two groups of sentences is that those in the latter are necessarily partitive, whereas those in the former are not.

**Epistemic specificity and the Definiteness Effect**

Fodor & Sag (1982) argue that *there*-insertion constructions, being characteristically used to assert the non-emptiness of a set, should be expected to be more compatible with the non-referential (i.e. epistemically nonspecific) understanding of an indefinite than with the referential (i.e. epistemically specific) understanding. Thus, the sentence in (111) "is most naturally construed as asserting the non-emptiness of the set of people smoking behind the woodshed" (p. 360).

(111) There was someone smoking behind the woodshed.

Further, they claim that sentence (112), unlike (111), sounds somewhat odd.

(112) There's a man that Kim used to go to school with in the late sixties in Arkansas smoking behind the woodshed.

The relevant difference between the two sentences is, they argue, that in the latter sentence, unlike the former, the indefinite has a rich descriptive content and this is a factor that favours the referential understanding, which is not approved in an existential *there*-insertion context.

Admittedly, the judgments about this example is not very clear-cut. It seems that there is a possibility for sentence (112) to felicitously produce epistemically specific interpretations for their subject NPs in certain contexts. However, Fodor & Sag

ascribe such possibilities to the existence of non-existential *there*-sentences. They argue that in a non-existential use, *there*-insertion contexts do tolerate indefinites used referentially. For instance, they take (113) to be a non-existential *there*-sentence and to be naturally construed as about a particular girl, rather than as a mere denial of the emptiness of the set of girls in the syntax class who cheated.

(113) There's a girl in our syntax class who cheated on the exam.

They claim that clear evidence for a referential understanding here comes from the fact that non-demonstrative *this*, whose use they argue to very strongly favour the referential understanding, is tolerated, as in (114).

(114) There's this girl in our syntax class who cheated on the exam.

As for the non-existential character of these sentences, according to Fodor & Sag, this is, for example, revealed by the fact that a purely existential *there* construction like (111) can be denied by saying *No there wasn't*, but this form of denial would be quite bizarre in response to (114).

Nevertheless, even if Fodor & Sag's handling of *there*-sentences with a referential interpretation is totally legitimate and sentence (112) sounds odd in its existential interpretation, they cannot be considered to have provided conclusive evidence in favour of the incompatibility between existential interpretations of *there*-sentences and epistemically specific interpretations of the subjects of such sentences. This is, as Lumsden (1988) points out, because the judgments about sentences like (112) may be attributable to NP complexity alone rather than the availability of a specific understanding. A more conclusive piece of evidence is provided by Lumsden himself. He argues that the availability of a specific understanding depends on the scope of negation. For example, the following sentence can be understood with both wide and narrow scope negation:

(115) *A girl* didn't arrive.

But, "it is only the reading with narrow scope negation which allows a specific understanding." In existential sentences, however, "it is normally only possible to interpret the negative element with wide scope" (p. 96). For instance, (116a) cannot be understood with wide scope negation represented in (116b):

(116) a. There isn't a girl at the door.

b. $\exists x[girl(x) \wedge \neg at\_the\_door(x)]$

If existential sentences do not allow for a reading with narrow scope negation and if this is the only reading where an epistemically specific understanding can arise, then we have a piece of strong evidence in favour of the claim that an epistemically specific NP cannot appear as the subject of an existential sentence. One question that might arise at this point is this: Why is an NP within the scope of a negation operator unable to receive an epistemically specific interpretation? In order to give a satisfactory answer to this question, we need to appeal to the notion of *presupposition*. This latter notion will be the subject matter of the ensuing discussion.

### 2.5.2 A semantic basis for the weak/strong distinction

We have seen that partitive, (epistemically) specific and strongly quantified interpretations manifest a common behaviour not only with respect to accusative marking in Turkish but also with respect to the ability to occur in the post-verbal subject position of an existential *there*-sentence in English. As will be recalled, the latter criterion divides quantifiers into two groups as strong and weak (cf. Section 2.3.1). Likewise, now that we have shown that they are all excluded from existential *there*-insertion contexts, we are entitled to include definite, partitive-indefinite and (epistemically) specific interpretations in the category of strong readings. Naturally, at this point a question may come to mind as to the semantic character of the weak/strong classification of NP interpretations. What is the semantic basis on which this classification can be analyzed? Or, what is the semantic phenomenon underlying all these so-called strong interpretations? Below are some proposals concerning this matter.

Milsark (1974), as a first attempt, classifies NPs that may or may not occur in existential sentences on the basis of whether or not they can be analyzed in terms of universal or near universal quantification. In view of the fact that there is a very close similarity in meaning between definite NPs and NPs containing explicit indicators of universal quantification,[14] this semantic criterion seems to be able to deal with the distinction between strong and weak quantifiers quite well. Note that there is not much difference in meaning between the following two sentences.

[14]Recall that definite descriptions have exhaustive interpretations (cf. Section 2.1.2).

(117) a. I read the books.

b. I read all the books.

However, as we saw in Section 2.5.1, it is not the case that NPs with weak determiners (i.e. with *a, some, many* etc.) can always occur in existential sentences. Take, for instance, the partitive *two of the cows* (cf. example (110b)). If there are ten cows, then the meaning of this NP will be far from universal or near universal quantification. But, it will still not be able to appear as the subject of an existential sentence. Being aware of this fact, Milsark revises the basis for the distinction between NPs that are allowed in existential sentences and those that are not. According to the new criterion, NPs not allowed in existential sentences are those that refer to a proportion of a certain set of entities, while NPs that may occur in such sentences are those that express mere cardinality (without any reference to a superset).[15] Consider the two sentences below.

(118) Some unicorns entered.

(119) There entered some unicorns.

Milsark notes that (118) "can mean either that an indefinite number of unicorns entered or that some of the unicorns walked in, but others, presumably, remained outside" (p. 199). As for (119), this sentence, Milsark argues, can express only the first sense (i.e. the cardinality reading). That is, it cannot mean: *there entered some, but not other, unicorns.* More precisely, whether the NP has a (covert) partitive reading or not is the determining criterion for its quantifier to be treated as strong or weak.

Diesing (1992) claims that paraphrasability as a partitive is one indicator of presuppositionality and that Milsark's semantic distinction centres on that latter notion: "Strong determiners presuppose the existence of the entities they are applied to. Weak determiners are ambiguous between a presuppositional reading and a nonpresuppositional reading in which they merely assert the existence of whatever entities they are applied to" (p. 59). It follows that *there*-insertion contexts (existential ones, of course) are not compatible with presuppositional readings and, thus, NPs with strong determiners are necessarily excluded from such contexts while NPs with weak determiners may or may not, depending on which interpretation they receive.

[15]Milsark also proposes to retain the term 'quantifier' only for the former kind of NPs.

Lumsden (1988) is another linguist who holds the view that presuppositionality is the underlying phenomenon behind the Definiteness Effect. He argues that the distinction between NPs that can and cannot function as subjects of existential sentences "is most straightforwardly expressed in terms of a contrast between quantified expressions that are presuppositional and those that are not" (p. 135).

The presuppositionality of strong readings can also be observed by separately examining each type of strong reading from the point of view of that phenomenon. However, before that, let us introduce some basic assumptions on the notion of presupposition, that will provide a relatively stable conceptual framework for our discussion.

According to Green (1989), a presupposition is semantic material which is taken for granted, that is, assumed and not asserted in a declarative sentence, questioned in a question, or ordered in an imperative. For example, a person who uttered (120) "would be understood as taking for granted 'Mr. D. was late for class', rather than asserting it, so objecting to the presupposition by simply denying it with [121] is not likely to meet with success. In contrast, the main assertion of the utterance is easily denied", as in (122):

(120) The students regret that Mr. D. was late for class.

(121) No, he wasn't.

(122) No, they don't.

We will adopt Green's definition of a presupposition as "semantic material which is taken for granted" as the most general characterisation of that notion.

A crucial property ascribed to presuppositions is that they are preserved under negation and interrogation. For example, the presupposition that Mr. D. Was late for class seem to be carried also by the negative and interrogative forms of the sentence in (120):

(123) The students didn't regret that Mr. D. was late for class.

(124) Did the students regret that Mr. D. was late for class?

In normal circumstances,[16] the utterance of either (123) or (124) will trigger the presupposition that Mr. D. was late for class.

[16]In some cases, a normally triggered presupposition is not actualised. In such cases, the pre-

In the use of either a definite or an indefinite-partitive, the speaker will take it for granted that the referent exists. This is simply because the referent is located in a set of objects already known to the hearer. The utterance of either

(128) John saw *the dog.*

or

(129) John saw *one of the dogs.*

will entail that the denoted dog existed. As this is actually a presupposition, it will survive under negation or interrogation. The existential inference in question will follow from each of the utterances below:

(130) a. John didn't see *the dog.*

b. Did John see *the dog.*

(131) a. John didn't see *one of the dogs.*

b. Did John see *one of the dogs.*

Similarly, strong quantifiers are considered among presupposition triggers. In order to see how strong quantifiers contrast with weak ones in terms of presuppositionality, compare the following two examples (adopted from Lumsden 1988):

(132) a. Did you manage to take a picture of $\left\{ \begin{array}{c} a \\ some \\ three \\ many \end{array} \right\}$ unicorn(s)?

---

supposition is said to be *cancelled.* Consider, for example, the following three sentences:

(125) Mary doesn't regret beating her husband.

(126) Mary beat her husband.

(127) Mary doesn't regret beating her husband, in fact she never did beat him.

Although (125) is normally taken to presuppose (126), when it is embedded in a context like (127), (126) cannot be a presupposition of the resulting complex sentence. Horn (1984, 1985; Horn & Bayer 1984) showed that the negation used in such examples is not linguistic negation but a **metalinguistic** device. While linguistic negation simply denies a proposition, metalinguistic negation denies the appropriateness of the **way** something was said. When we talk about the survival of presuppositions under negation, this should be understood as linguistic negation, not metalinguistic one.

b. It isn't true that I took a picture of $\left\{ \begin{array}{c} a \\ some \\ three \\ many \end{array} \right\}$ unicorn(s).

(133) a. Did you manage to take a picture of $\left\{ \begin{array}{c} most \\ every \\ all \end{array} \right\}$ unicorn(s)?

b. It isn't true that I took a picture of $\left\{ \begin{array}{c} most \\ every \\ all \end{array} \right\}$ unicorn(s).

Clearly, the affirmative versions of the sentences in these examples (e.g. *You managed to take a picture of a unicorn* or *It is true that I took a picture of most unicorns.*) will entail that there existed a unicorn or unicorns. However, provided that the quantifiers in (132) are not partitively interpreted, it is only in (133) that this inference seems to survive the interrogation or negation. As Lumsden (1988) points out, whereas (132) can be smoothly uttered with no residual inference about the existence of unicorns, (133) is somehow presuppositional in that sense.

**Epistemic specificity**

Epistemic specifics constitute another set of expressions that seem to always induce a presuppositional interpretation. Schwarz (1979), for instance, remarks on the presuppositional character of rigidly designating (i.e. epistemically specific) expressions as follows:

> When we refer rigidly, there is a sense in which we are not prepared to entertain the suggestion that our utterance is false because what we refer to does not exist. This is a function in part of our usual preparedness to substitute alternative descriptions of our referent if the referring term we actually use fails to pick out an individual. The deeper reason behind this, however, is that our expressing the proposition we intend depends on the referent's actual existing. (p. 169)

According to Schwarz, the conclusion that preferably follows from this observation is that the existence of the referent of an epistemically specific expression is presupposed.

Among those who express similar views are Strawson and Searle. Strawson (1950) claims that one cannot assert the existence of an individual and refer to it at the same time. Similarly, Searle (1969) argues that the act of referring requires the existence of the object the speaker intends to be referring.

Adopting these views, we will assume that an epistemically specific (i.e. rigidly referring or referential) interpretation always comes with the presupposition that the referent exists. We will not go into the question of why this must be the case. We will only note that this view of epistemic specifics will allow one to give a plausible explanation of many facts about them. To give an example, in the preceding section we drew attention to a point made by Lumsden (1988): A specific understanding of an NP in a sentence like

(134) A girl didn't arrive.

is only possible when the sentence has a reading with narrow scope negation. Why is a specific interpretation restricted to this reading? Assuming that epistemically specifics are always presuppositional, there seems to be a straightforward answer to this question: An epistemically specific interpretation induces the presupposition that the referent is existent. As this is a presupposition, it survives under negation, which means nothing but a reading with narrow scope negation.

### 2.5.3 Presuppositionality and accusative marking in Turkish

Diesing (1992), relying on Enç's (1991) account of partitivity and of the use of accusative morphology in Turkish, claims that in Turkish "presuppositional object NPs are distinguished from nonpresuppositional objects in that they must be morphologically marked with accusative suffix" (p. 87). We already saw that in Turkish a DO receiving a strong reading (i.e. a definite, partitive-indefinite, (epistemically) specific or strongly quantified reading) has to carry the accusative suffix, *-(y)I*. We also saw that all the strong readings can be given a presuppositional account. These two observations seem to strongly support Diesing's claim. Thus, we seem to have arrived at a conclusion as to the underlying semantic phenomenon behind the obligatory use of the accusative suffix in Turkish. That is, at first glance, presuppositionality appears to be the determining factor for the use of this suffix.

However, it is not difficult to find counter-examples to such a conclusion. As the

following examples show, presuppositionality is not always a sufficient condition for the obligatory use of the accusative suffix in Turkish:

(135) Kim Kaya-ya *bir kitap* ver-di?
who Kaya-dat one book give-pst
'Who gave Kaya a book?'

(136) Oya kim-e *bir kitap* ver-di?
Oya who-dat one book give-pst
'Who did Oya give a book?'

(137) Oya Kaya-ya *bir kitap* ver-di?
Oya Kaya-dat one book give-pst
'Oya gave Kaya a book?'

Both of the questions in (135) and (136) and an utterance of the sentence in (137) as an answer to either of these questions will presuppose the existence of a book as the referent of the NP *bir kitap* 'a book'. Nevertheless, in all of these cases this NP will felicitously appear in the DO position without case morphology.

Can we find another criterion for the obligatory use of accusative morphology in Turkish such that it will embrace the presuppositionality induced by the strong interpretation of NPs and it will exclude the presuppositionality induced by examples like the ones above? We give a positive answer to this question. A crucial observation in order to get to the required criterion is the following:

The presuppositionality of the referent of the DO in examples like (135)-(137) stems from the interpretation of the whole sentence. That is, the presuppositionality in question is a feature of the structuring of the sentence, not a feature of the DO itself. For instance, when (137) is uttered as an answer to (the Turkish equivalent of) a question like 'What favour did Oya do Kaya?', the existence of a book will not be a presupposition but an entailment.

The interaction between the phenomenon of presupposition and the structuring of the sentence will be discussed in Chapter 4. The formulation of a sufficient and necessary semantic condition for the obligatory use of the accusative suffix in Turkish will be the purpose of the next chapter.

## 2.6 Summary

In this chapter, we first identified a list of semantic conditions under which the Turkish accusative suffix, *-(y)I* is obligatorily used. In Sections 2.1-2.3, we showed that a Turkish DO must carry this suffix if it receives an interpretation that is definite, partitive-indefinite, (epistemically) specific or strongly quantified, which we categorized as a strong interpretation. In Section 2.4, we demonstrated with examples that this constraint has nothing to do with whether the DO receives the strong interpretation on the *object-* or *kind*-level. Finally, in Section 2.5, we attempted to find a unique semantic phenomenon underlying all obligatory uses of the accusative suffix in Turkish. To this end, we examined the interaction between presuppositionality and accusative marking in Turkish, and saw that presuppositionality is not the ultimate criterion for the use of accusative morphology in this language.

# Chapter 3

# A Situation-Theoretic Approach to Accusative Marking, Strong Readings and Noun Incorporation

In this chapter, our primary aim is to provide a unitary account of the semantics of accusative marking in Turkish. More specifically, we will endeavour to find out a unique semantic criterion for the obligatory use of accusative morphology in this language. Furthermore, we will put forward a situation-theoretic treatment of strong readings and noun incorporation semantics, and offer a proposal for case marking in Turkish.

As we will develop the semantic side of our account within a situation-theoretic framework, we will first introduce some basic ideas and terminology of situation theory.

## 3.1 Situation theory: an introduction

Situation theory is an abstract theory for talking about situations. Situations can be considered as **limited parts** of reality. As Gabbay (1993) points out, when compared with the traditional notion of a model, the situation should be thought of as some partial states of a model. "But these situations can also be elements of situations, standing in relations to one another and to other things" (p. 90). An important property of situations is that they have an information-based characterisation. The following quote from Cooper (1991) expresses this view:

> The leading intuition behind the notion of situation is that it is a part of the world which a cognitive agent might perceive. ... One of the important insights about perception enshrined in the work on situation theory is that the parts of the world agents perceive are not defined in the way that one might initially expect. Situations are, for example, not individuated by space-tine locations. The parts of the world we perceive are not for example parts of the world which support all the facts in our visual field at a particular time. As cognitive agents we are forced to concentrate our attention on parts of the world which support particular relevant facts which we have in focus at a particular time. Thus the division of the world into situations is one that is based on information rather than space-time. (p. 14)

Parts of the reality that have a capacity for perception, for acquiring information from other parts, are called *organisms* (Barwise & Perry 1983). A basic assumption of situation theory is that there are certain *uniformities* or regularities (across real situations) that an organism individuates (or discriminates in its behaviour). An organism's way of understanding the world is modeled by the uniformities it discriminates, which is called its *scheme of individuation.*

### 3.1.1 Individuals, locations, relations

The basic uniformities, which constitute the basic building blocks of situation theory, are *individuals*, (spatial and temporal) *locations*, and *relations* (including *properties*).

Individuals are uniformities in that they persist through situations. The same individual can appear again and again in different locations, having possibly different properties or standing in possibly different relations. They are single, essentially unitary items, which, unlike the points of mathematics, are usually extended in space and time and often have parts that are also individuals, e.g., dogs, people, tables, apples. Individuals will be denoted by a, b, c, etc. or by ordinary proper names.

Spatial locations or places are uniformities in that different things can happen at the same place at different times. They are not necessarily like the 'points' of mathematical spaces. They can have spatial extensions. Spatial locations will be denoted by l, $l_1$, $l_2$, etc.

Temporal locations or times are uniformities in that different things can take place at the same time at different places. Like spatial locations, they may be either points or regions. Temporal locations will be denoted by t, $t_1$, $t_2$, etc.

Relations are uniformities individuated by the organism that hold of, or link together certain other uniformities, which function as its arguments, for some period of time, usually at some place or other. Relations will be denoted by their English names, such as kick, sleep, etc.

Relations come with argument roles and can be classified in terms of their arity, i.e. the number of argument roles they may have.[1] For instance, the relations in (138) and those in (139) can be considered to be respectively one-place and two-place relations.[2] [3]

(138) sleep, run, bark

(139) like, hit, kick

At this point, it is worth noting that a common practice in situation theory is to consider spatiotemporal locations as arguments of relations. This gives each relation extra argument roles. For instance, the relations **kick** and **run** are taken to have also time and place roles in addition to their ordinary argument roles.[4] However, as Glasbey (1994) points out, that times and places are argument roles of relations should not be taken as a foregone conclusion in situation theory, but rather this should be considered to be an issue which is worth investigating. Without having a strong stance on the issue, we will assume that relations may have time or place roles, or both. Nevertheless, when classifying relations in terms of their arity, following the common practice, we will take only the argument roles other than time and

[1] Whether a particular relation has a fixed arity, or whether the number of arguments it may have can vary, is a question not yet determined by situation theory (Glasbey 1994).

[2] One-place relations are also called properties.

[3] Another way of classifying relations is to group them into subtypes according to the types of argument roles they come with. One approach is to use thematic roles to identify argument roles and classify relations accordingly. For example, both **hit** and **kick** can be considered of the same type by virtue of the fact that the arguments of both of them play the roles **agent** and **patient**. (See Sag & Pollard (1988) and Engdahl (1990) for a discussion of this issue.)

[4] Whether to use a single spatiotemporal argument role or separate time and place roles is a controversial issue. The former approach was prompted, for example, by early work in situation semantics (Barwise & Perry 1983) and by the treatment of aspectual classes in situation semantics in (Cooper 1985) and (Cooper 1986). Crow (1990) argues in favour of the latter approach, claiming that there is little linguistic evidence supporting the need for four-dimensional space-time "chunks" in the ontology of situation theory. See Glasbey (1994) for a detailed discussion of this matter.

place into consideration. Furthermore, whenever the time or place of a situation is not of any particular interest for the discussion, the spatiotemporal argument roles will be ignored for simplicity.

Individuals, locations and relations can be used to build up more complex situation-theoretic objects. We will represent such complex objects in the Extended Kamp Notation (EKN) (Barwise & Cooper 1993). This is a graphical notation system for situation theory. It takes its inspiration from the box notation developed by Kamp (1981) for the discourse representations structures (DRSs) of discourse representation theory (DRT). EKN is a sorted notation system. Every term is of sort *Object*. As a term may also be of other sorts (such as *Situation, Infon, Proposition, Relation etc.*), terms may be of more than one sort, which is a property most sorted notation systems are not allowed to have.

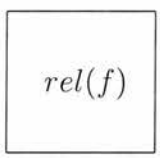
Below are some of the complex objects that can be built up with the basic building blocks of situation theory (i.e. with individuals, locations and relations).

### 3.1.2 Situations, Infons, (Austinian) Propositions

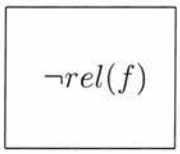
The scheme of individuation (relativized to an organism) induces a classification of different parts of reality, i.e. of situations, which will be denoted by s, $s_1$,..., r, $r_1$,..., etc.

Situations are characterised by the *basic* items of information they support, i.e., by *infons*.[5]. A *basic* positive infon and its dual (i.e. the corresponding infon with zero polarity) are, respectively, of the forms shown below:

(140) a.




b.




where *rel* is a relation, $f$ is a mapping assigning objects to the arguments roles of *rel*, i.e. an *assignment*, and ¬ is the negation symbol.

[5]Infons are also referred to as *states of affairs, soas* or *(possible) facts* in the literature

Assignments are of the following form:

(141) $\begin{bmatrix} role_1 \rightarrow a_1 \\ \vdots \\ role_n \rightarrow a_n \end{bmatrix}$

To give an example, the infons corresponding to the sentences 'John kicked Mary' and 'John didn't kick Mary' will be, respectively, the ones represented below (where the space and time roles are ignored and the other argument roles are identified by thematic roles):

(142) a. $\boxed{\text{kick}(\begin{bmatrix} \text{agent} \rightarrow \text{john} \\ \text{patient} \rightarrow \text{mary} \end{bmatrix})}$

b. $\boxed{\neg\text{kick}(\begin{bmatrix} \text{agent} \rightarrow \text{john} \\ \text{patient} \rightarrow \text{mary} \end{bmatrix})}$

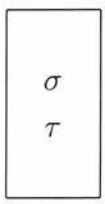
Sometimes, the argument roles of an assignment are left unlabelled and its brackets are neglected. For instance, the infon corresponding to 'John kicked Mary' is written as:

(143) $\boxed{\text{kick(john,mary)}}$

In such cases, the argument roles are identified as the first, second, so on, role, in the order that the arguments appear in the box. That is, they are indexed by 1,...,$n$.

Given any two infons, there are two other (*non-basic*) infons: one is their conjunction and one is their disjunction. If $\sigma$ and $\tau$ are two infons, then

(144)



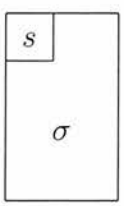

denotes their conjunction, and

(145)


denotes their disjunction.

Barwise & Etchemendy (1990) calls attention to the importance of keeping in mind the distinction between a piece of information and a proposition.[6] They argue that the semantical paradoxes arise in part from the conflation of information content with a proposition. Pieces of information are not things that in themselves are true or false. They may hold or not *relative to a situation.* Propositions, on the other hand, are true or false on their own. They require not just a piece of information, but also a situation against which to evaluate it. Given a situation, $s$, and an infon, $\sigma$, we can construct a proposition, denoted as:

(146)

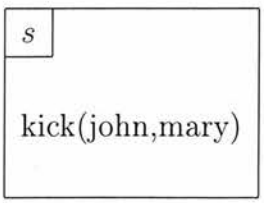



The official name for this relation between the situation $s$ and the infon $\sigma$ is that $s$ supports $\sigma$, which is denoted by $s \models \sigma$ in the linear notation. This indicates that the situation $s$ makes the infon $\sigma$ factual. In other words, $\sigma$ is a piece of information that is true of $s$.

A proposition of the form in (146), that a situation supports an infon, is called an *Austinian* proposition. (147) exemplifies this sort of propositions:

[6]They further note that they use the term "information" in the sense of 'possible information'. "That is, it is not assumed to be veridical. The notion of veridical information presupposes a situation against which to judge the purported information" (p.36, fn.2).

(147)




There are three points which we find worth noting about the propositional relation between situations and infons.

First, a situation cannot support an infon and its dual at the same time. This is the axiom of *consistency*, which is expressed as follows:

(148) $\forall s, \sigma[\sigma$ is a basic infon and $s \models \sigma$ implies $s \not\models \sigma]$

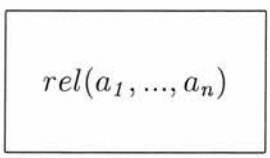
Second, the *excluded middle* axiom, which is expressed in (149), is NOT present in situation theory.

(149) $\forall s, \sigma[s \models \sigma$ or $s \not\models \sigma]$

That is, a given situation need not necessarily say something about the factivity of a given piece of information. It may remain entirely salient on this issue. As Cooper (1991) points out, this is a natural consequence of the fact that situations are parts of the world, not necessarily the whole of it. "It is possible, for example, to see Mary smoke without seeing either Charles run or not run. We perceive only part of the world whereas the axiom of the excluded middle would require that we see the whole world" (p. 16).

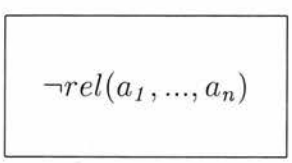
Third, a notion that is closely related to the second point above is that of *completeness*. A situation $s$ is complete iff for all relations $rel$ and appropriate arguments $a_1, ..., a_n$ for $rel$, $s$ supports either

(150)




or

(151)

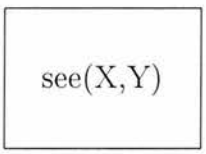


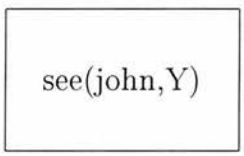
Only a world can be a complete situation. As Cooper (1991) notes, the notion of world arrived at in this way and the assumption that there are all possible situations not just actual ones make it possible to embed a theory of possible worlds in a situation theory.

### 3.1.3 Parameters, Parametric Objects, and Anchors

Parameters are indeterminates that range over objects of various sorts. They will be denoted by capital letters, such as X, Y, Z, etc.

When we replace a constituent of an object by a parameter (that is intended to range over objects of the same sort as the replaced constituent), we get a *parametric* object. For instance, an infon which has one or more of its argument roles filled by a parameter is said to be a parametric infon. (152) exemplifies parametric infons:

(152) a. 


b. 

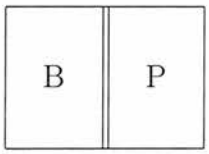

Parametric objects can be thought of as generalisations over non-parametric ones. To get a particular 'instance' of a parametric object we need a mechanism that assigns *values* (i.e. *constants*) to parameters. Such mechanisms are referred to as *anchors*. Formally, anchors are functions from a set of parameters to a set of objects, which is a subset of objects the parameters are intended to range over.[7] The object associated with a parameter by means of this function is also called an anchor (i.e. the anchor of the parameter). Replacement of a parameter in a parametric object by its anchor yields an object belonging to the class that the parametric object generalises over.

[7]It is worth noting that an anchor differs from an assignment in that the latter assigns values to roles (not parameters).

### 3.1.4 Restricted objects

Situation-theoretic objects can have *restrictions* placed upon them. Only propositions can restrict an object. If $B$ is an object and $P$ is a proposition, we can pair $B$ with $P$ to yield a *restricted object*, represented in EKN as in (153):

(153)




The restriction is undefined if $P$ is false or either $B$ or $P$ is undefined.

### 3.1.5 Described situations vs. resource situations

In situation semantics, which is the application of situation theory to natural language, a distinction is made between described situations and resource situations. Described situations are parts of the reality that are 'talked about' or 'referred to' by utterances of declarative sentences. That is, the described situation is the situation that is the subject matter of the utterance. Resource situations, on the other hand, are situations that are exploited to describe another situation.

Resource situations were first introduced by Barwise & Perry (1983) to account for definite descriptions[8] and other noun phrases that they are called "singular" (such as 'a man' and 'my wife'). Later on, Cooper (1993) suggested that there could be potentially as many resource situations as there are noun phrases. A resource situation associated with a noun phrase serves as the domain of reference for that noun phrase. Let us illustrate the described situation vs. resource situation situation distinction with an example.

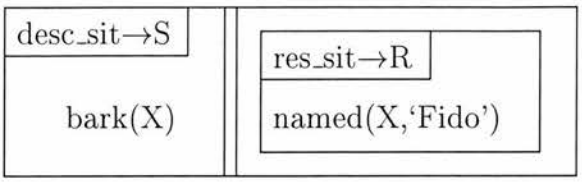
We assume that the denotation of a declarative sentence is a proposition. For example, ignoring some details, the meaning representation for:

(154) Fido barks.

is:

[8]We will briefly explain Barwise & Perry's (1983) account of definites in Section 3.3.1.

(155)




Here, S is the described situation. That is, it is the situation that is the primary concern of the utterance. R serves as a resource situation. It donates the referent of the proper name. The information that the referent of that proper name is named 'Fido' does not constrain the described situation, but the resource situation.

We argue that the described situation vs. resource situation distinction is the semantic phenomenon that underlies the alternation between the uses of Turkish DOs with or without case morphology. More specifically, our claim is that the lack of case morphology in the DO position of a Turkish sentence indicates that the situation described by this sentence is also the resource situation for the NP occupying the DO position or that in an utterance the distinctness of the described situation and the resource situation for the DO requires the DO to carry case morphology. In the subsequent sections, we will provide evidence to substantiate this claim.

## 3.2 Objects without case morphology

As should be recalled, in the preceding chapter we made the following two observations:

1. In Turkish, a DO receiving a strong interpretation (i.e. a definite, specific, or strongly quantified reading) must carry case morphology.

2. A strongly interpreted NP is always presuppositional.

These two observations would naturally lead one to expect that it is presuppositionality that is the determining factor for the use of accusative morphology in Turkish. However, in Section 2.5.3, we saw that an NP can appear in the DO position of a Turkish sentence without case morphology even if the existence of its referent is taken for granted (i.e. it is presuppositional).

We argue that all these observations can be given a straightforward explanation if they are re-considered from the point of view of the described situation vs. resource

situation distinction. We propose to formulate the weakness requirement for case morphemeless Turkish DOs as follows:

(156) WEAK OBJECT PRINCIPLE:

The lack of case morphology in the DO position of a Turkish sentence signals that the resource situation for the nominal occupying this position is the same as the described situation. That is, in such a case the semantic material of the DO is part of the described situation.

Let us now see some examples providing supportive for this claim. Consider first the following question-answer dialogue:

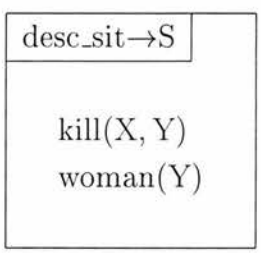
(157) Kaya NIÇIN tutukla-n-mış?
Kaya why arrest-pass-pst
'Why was Kaya arrested?'

a. Çünkü bir KADIN-I öldür-müş.
because one woman-acc kill-pst
'Because he killed a woman.'

b. ??Çünkü bir KADIN öldür-müş.
because one woman kill-pst

In this example, only (157a) is entirely acceptable as an answer to the provided question. (157b), where the DO does not bear the accusative suffix, sounds considerably odd when used for the same purpose. It is noteworthy that neither of these sentences is intended to have a partitive or epistemically specific reading. Sentence (157b) is unacceptable in the given context because it sounds as if the fact that the murdered person was a woman was an important factor in the arrest of Kaya. In other words, in an utterance of this sentence the property of being a woman will be considered to be part of the situation that caused the situation which is referred to in the question (i.e. the one where Kaya was arrested) to happen. That is, ignoring the contribution of *çünkü* 'because', the interpretation of (157b) will be something like:

(158)



However, according to our factual world knowledge, the gender of a murdered person cannot be a determining factor for the arrest of the murderer. Interestingly, the sentence in (157b) could be rendered totally acceptable by altering the context it is uttered in. This could be done, for instance, by replacing the question in (157) with the one below:

(159) Bazı feminist örgüt-ler NIÇIN Kaya-yı öldür-mek isti-yor-lar?
some feminist organisation-pl why Kaya-acc kill-inf want-prog-3pl
'Why do some feminist organisations want to kill Kaya?'

(157b) would be a felicitous response to this question, because foregrounding the fact that the murdered person was a woman would make sense in this context.

It follows that the absence of case morphology in the DO position of the sentence in (157b) causes the descriptive content of the DO to be foregrounded as part of the described situation. As the content of the NP involves gender information about the referent, its foregrounding in this way sounds odd in the context of (157) but it is fine in the context of (159). If we use a sentence with a case morphemeless DO that can be given a gender-neutral interpretation to describe the same situation, the judgments of acceptability will be reversed for these two contexts. For example,

(160) Çünkü bir ADAM öldür-müş.
because one man kill-pst
'Because he killed a man (someone).'

will be a felicitous response to the question in (157), but probably not to the one in (159). Crucially, the DO in this example is supposed to mean a human being, not a male person. Turkish allows the NP *bir adam* 'a man' to be used by abstracting away the gender information and retaining only the [+human] feature.

It is important to note that whether the information encoded by the DO is asserted as new information or is presupposed would not not affect the acceptability judgments about the use of accusative morphology in sentences similar to those discussed above. A continuation like (161b) would not be felicitous for the dialogue starting with the question in (157):

(161) YANLIŞ adam-ı tutukla-mış-lar.
wrong man-acc arrest-pst-3pl
'They arrested the WRONG man.'

a. Kaya DEĞIL; [$_F$ ALI] bir kadın-ı öldür-müş.
Kaya not Ali one woman-acc kill-pst
'It was NOT Kaya; it was ALI who killed a woman.'

b. Kaya DEĞIL; ??[$_F$ ALI] bir kadın öldür-müş.

However, a similar continuation, such as (162), would be totally fine for the dialogue starting with the question in (159):

(162) Feminist-ler YANLIŞ adam-ın peşinde-ler. Kaya DEĞIL; ??[$_F$ ALI] bir
feminist-pl wrong man-gen3 after-3pl Kaya not ali one
kadın öldür-müş.
woman kill-pst
'The feminists are after the WRONG man. It was NOT Kaya; it was ALI who killed a woman.'

Clearer evidence in favour of the claim in (156) can be acquired through the observation of examples with sentences that are used solely for the purpose of describing a scene. Consider the examples in (164) and (165), each of which is assumed to be uttered as a reply to the question in (163):

(163) Oda-ya gir-diğ-in-de, NE gör-dü-n?
room-dat enter-ger-poss2-loc what see-pst-2sg
'What did you see when you entered the room?'

(164) Oda-da üç adam var-dı.
room-loc three man present-pst
'There were three men in the room.'

a. ??Adam-lar-dan bir-i bir elma-yı yi-yor-du.
man-pl-abl one-poss3 one apple-acc eat-prog-pst

b. Adam-lar-dan bir-i bir elma yi-yor-du.
man-pl-abl one-poss3 one apple eat-prog-pst
'One of the men was eating an apple.'

(165) Oda-da bir masa ve masa-nın üst-ü-nde üç karınca var-dı.
room-loc one table and table-gen3 top-poss3-loc three ant present-pst
'There was a table in the room and there were three ants on the table.'

a. Karınca-lar-dan bir-i bir elma-yı yi-yor-du.
ant-pl-abl one-poss3 one apple-acc eat-prog-pst
'One of the ants was eating an apple.'

b. ??Karınca-lar-dan bir-i bir elma yi-yor-du.
ant-pl-abl one-poss3 one apple eat-prog-pst

These two examples contrast with each other with respect to the acceptability of the employment of case morphology in the DO position of their second sentences. As both examples are supposed to be uttered in the same discourse-context (i.e. as an answer to the question in (163)), this contrast cannot be ascribed to discourse-pragmatic factors. The only disparity between the two fragments of discourse, which is not dependent on a particular context of use, seems to be stemming from the difference between the types of the eaters in the situations being described. The most obvious difference between the eaters is that the eater in (164) is human but the one in (165) is non-human. However, as the oddity of (166a) and the entire acceptability of (166b) in the example below show, the feature of [+/- human] does not seem to play a part in the contrast in question:

(166) Oda-da üç ayı var-dı.
room-loc three bear present-pst
'There were three bears in the room.'

a. ??Ayı-lar-dan bir-i bir elma-yı yi-yor-du.
bear-pl-abl one-poss3 one apple-acc eat-prog-pst

b. Ayı-lar-dan bir-i bir elma yi-yor-du.
man-pl-abl one-poss3 one apple eat-prog-pst
'One of the bears was eating an apple.'

Now, the only relevant difference between an ant, on the one hand and a man or a bear, on the other hand, seems to be the difference between their sizes. The interpretations which the odd sentences above give rise to appear to support this claim. These sentences are odd not because they are meaningless or very difficult to interpret, but because they lead one to visualise the situations they describe as having ontologically abnormal objects. For example, the (b) sentence in (165) sounds as if the ant eating the apple was enormously bigger than ordinary ants, such as an ant of the size of a dog. Obviously, dog-sized ants do not conform to the ontological classification we have about the actual world. It is worth noting that this sentence would sound fine when assumed to describe an imaginary world (for instance, in a fairy tale).

At this point, one might want to raise a question like: why is the first interpretation coming to mind about this sentence the one where the ant is thought of as being much bigger than it usually is but not the one where the apple is thought of as being

much smaller that it usually is? There does not seem to be any clear-cut reason for this. Maybe there is no general preference for any of these interpretations. It may be the case that which of them comes to mind first is simply a matter of individual differences among possible readers of sentences like that. What we are particularly interested in here is not finding an answer to this question but noting the fact that both of these interpretations become fine once an imaginary world has been set up to support the ontological classification they give rise to. For example, both of the following sentences can occur in a text narrating a fairy tale:

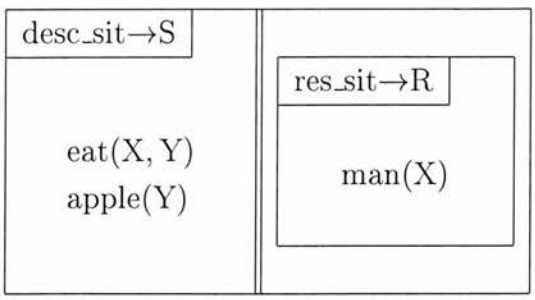
(167) Karınca-lar-dan bir-i susam çekirdeğ̄-i büyüklüğ̄ünde minik bir
ant-pl-abl one-poss3 sesame seed-poss3 sized mini one
elma yi-yor-du.
apple eat-prog-pst
'One of the ants was eating a mini-apple of the size of a sesame seed.'

(168) Adam-lar-dan bir-i fil büyüklüğ̄ünde dev bir elma-yı
man-pl-abl one-poss3 elephant sized giant one apple
yi-yor-du.
eat-prog-pst
'One of the men was eating an elephant-sized giant apple.'

How can we account for the interaction between the relative sizes of the eater and eatee and the use of accusative morphology in examples like those above? We propose that what matters in such examples is whether the object (i.e. the referent of the DO) is within the physical boundaries of the described situation or not. It seems reasonable to take an eating event to be delimited by the boundaries of the parts of the (agent's) body involved in this event (i.e. the mouth, the part of the face surrounding the mouth and the hands or front legs). It is these parts of the body that provides the information that an eating event is taking place. In an event where a human being or a bear is eating an apple (in the actual world) the apple will fall within the physical boundaries of the eating event. That is, it will be perceived as part of that event. Therefore, in examples like (164b) or (166b) the described situations will also serve as the resource situations for the direct objects. The semantic object corresponding to an interpretation of (164b) will be, more or less, like (169):[9]

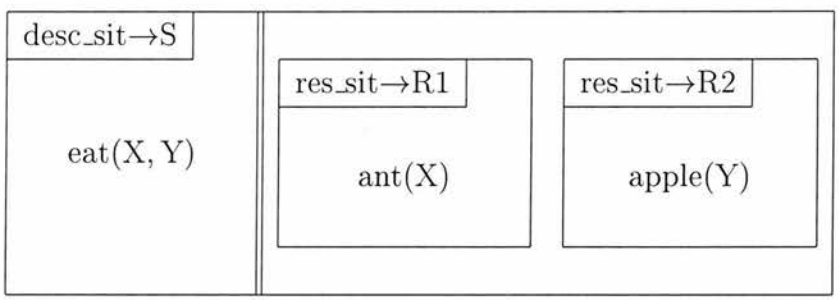
[9]How definites can be given a situation-theoretic treatment using resource situations will be discussed in the next section.

(169)




On the other hand, in a (non-imaginary) event where an ant is eating an apple only a tiny bit of the apple will be inside the physical boundaries of the eating event. The whole of the apple will be situated in a location that only partially overlaps that of the event of eating. Thus, in an example like (164) the resource situation donating the referent of the DO will be different from the described situation. (170) is a rough representation of the interpretation of (165a):

(170)




The observations we have made above about some scene-describing sentences provide considerable evidence for our claim that the lack of case morphology in the DO position of a Turkish sentence indicates that the resource situation for the NP occupying this position is the same as the described situation. The examples we have seen strongly suggest that it is the distinctness of its resource situation and the described situation that forces a Turkish DO to carry case morphology. In the next section, we will show that all types of strong NPs can be given a situation-theoretic treatment where the resource situation for the strong NP is different from the described one. Given that strong NPs are obliged to carry case morphology in the DO position of Turkish sentences, this should be considered to reinforce our position with respect to the semantics of accusative marking in Turkish.

## 3.3 A situation-theoretic treatment of strong readings

### 3.3.1 Definites

Recall that according to Hawkins' (1978) theory of definite descriptions, in a felicitous use of the definite article the speaker normally does two things:

1. s/he instructs the hearer to locate the referent in some shared set;

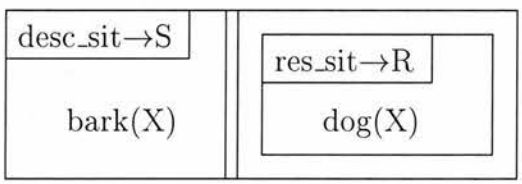
2. s/he refers to the totality of the objects or mass within this set that satisfy the referring expression.

Another approach to definiteness in terms of uniqueness is the work by Barwise & Perry in *Situations and Attitudes* (1983), where they introduced the notion of *resource situation.* As already said, resource situations are situations that are exploited in order to describe another situation. Barwise & Perry suggested that each use of definite description could be related to a different resource situation whose members include a **unique** referent that satisfies it.[10]

For example, assuming that R has a unique dog in it, the meaning of the following sentence can be represented as in (172).

(171) *The dog* barked.

(172)




We could actually render the uniqueness assumption explicit by replacing the infon constraining the resource situation with *unique_dog(X).*

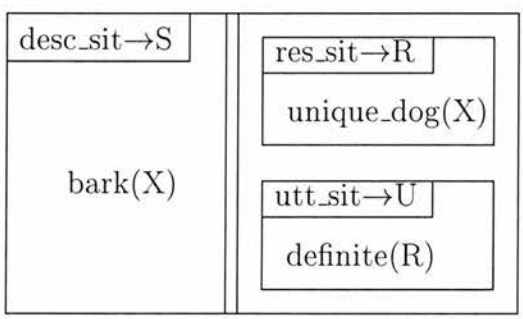
It is worth noting that Barwise & Perry's account of definite descriptions is compatible with that proposed by Hawkins. Roughly speaking, in their account situations take over the job sets perform in Hawkins' account. Poesio (1993), for example,

[10]Note that resource situations are related to uses of definite descriptions, rather than definite descriptions themselves. As Cooper (1993) points out, this would allow for cases where we have two occurrences of the same definite description in the same sentence (e.g. 'The dog bit the dog') which nevertheless have a different referent.

exploits this view of compatibility between the two theories in order to reformulate Hawkins' theory of definite descriptions in situation-theoretic terms. Having replaced the notion of 'shared set' with that of 'shared situation',[11] he argues that "upon hearing a definite description, a participant in the conversation tries to 'anchor' its 'resource situation' to a shared situation, which the speaker intends him/her to locate the referent of the definite in".[12]

In the example above, we have only dealt with the semantic side of definite reference. That is, we have only expressed the semantic condition that the expression refers to a unique individual within a resource situation. But there is also a pragmatic side to this phenomenon. In Poesio's terms, the hearer must anchor the resource situation to a shared situation. Situation semantics is an ideal framework to handle the dual nature of definite reference. In situation semantics, when representing the meaning of an expression we are allowed to place not only semantic conditions on the denoted entity but also discourse-pragmatic conditions on the utterance of context.[13] We take shared situations to be those situations which are informationally definite (i.e. which are, in Prince's terminology, either hearer-old or uniquely inferable on the basis of shared knowledge). Considering the hearer's mental state to be an important part of the utterance situation, we offer (173) as a representation for (171), which can express both the semantic and pragmatic conditions on the use of the definite description:

(173)




[11]Poesio describes this notion as follows: "A situation s is 'shared' between x and y if every fact $\psi$ supported by s is mutually known by x and y" (p. 348).

[12]Poesio (1993) also proposes an integration of some aspects of the proposals on discourse structure (Grosz & Sidner 1986, Fox 1987) and on the attentional states of discourse participants (Grosz 1977, Linde 1979) to his formalisation, which are some relevant issues to the pragmatics of definite description interpretation.

[13]We should note that this is not a supplementary flexibility provided by situation semantics. It rather follows from the basic tenets of the theory. In situation theory, meaning in general is analysed as a relation between situation types. As for linguistic meaning, it is defined as a relation between utterance situation types and described situation types.

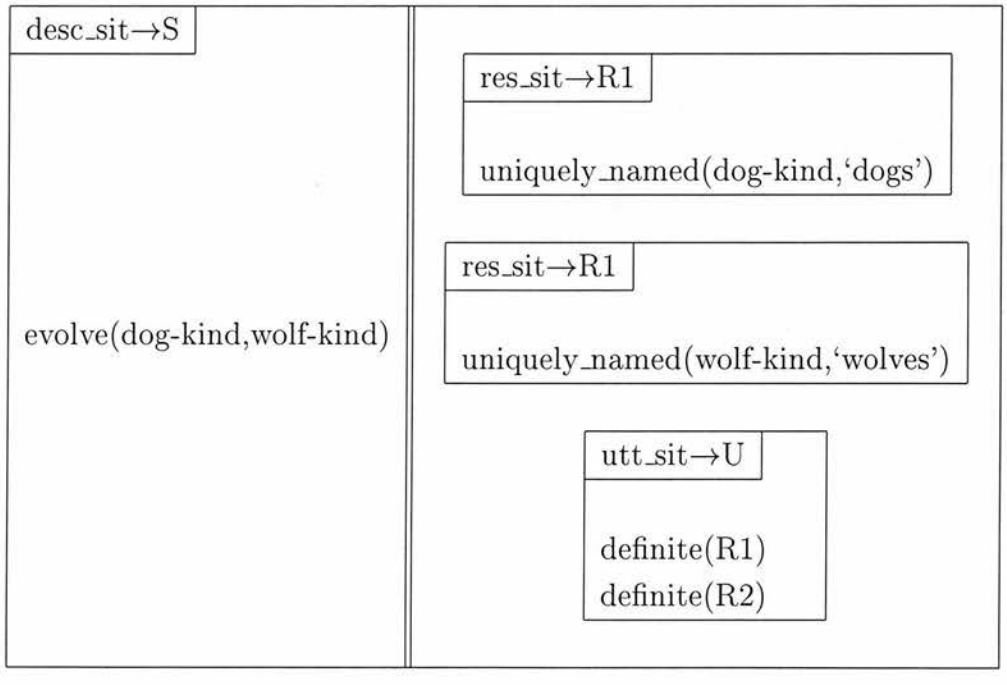
We should emphasise that the term 'definite' here is meant to stand for informational definiteness (which is a property of discourse entities), not for formal definiteness (which is a property of expressions). Whenever the informational definiteness of a discourse entity is placed as a condition constraining the utterance situation, this is to be interpreted as an instruction for the hearer to locate that entity in his/her knowledge store in an unambiguous way.

As a final point, we wish to make a remark about kind-referring reference. As we model kinds as special types of individuals, we do not think that radically different strategies are needed in dealing with definite or indefinite reference to kinds. When a kind-referring NP is a definite singular NP like *the dog*, a bare plural like *dogs*, or a mass term like *water*, it can be semantically analysed as a proper name, with the rigid designatum being a kind.[14] Let us use ordinary English nouns followed by *-kind*, such as *dog-kind, water-kind*, as constants standing for kinds in our semantic representations. The representation of:

(174) *Dogs/The dog* evolved from *wolves/the wolf.*

can be something like:

(175)




[14]For a defence of the analysis of kind-referring terms as proper names, see, for instance, Langford 1949, Carlson 1977, Heyer 1985, and Krifka et al 1995.

The restrictions are meant to indicate that the kinds referred to are hearer-old (i.e. familiar to the hearer) and they are associated with the bare plurals 'dogs' and 'wolves' in English.

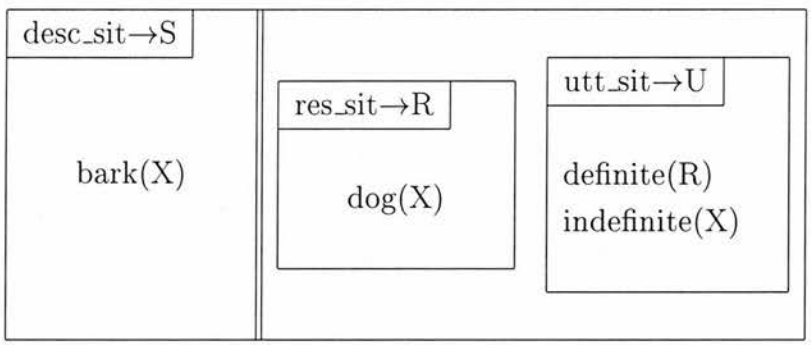
### 3.3.2 Partitive indefinites

As it should be remembered, in the case of partitive specifics the definiteness constraint is shifted from the referent onto a set which the referent is a member of. In our situation-theoretic terminology, this amounts to saying that upon hearing a partitive specific, the hearer tries to 'anchor' its resource situation to a shared situation which contains the referent of the partitive specific, though not necessarily in a uniquely identifiable way. For example, assuming that its subject receives a covert partitive reading, the meaning representation for:

(176) A dog barked.

will be:

(177)




Sentence (176) could, for instance, be preceded by a sentence like:

(178) Suddenly, three dogs appeared in front of us.

The situation described by this sentence would be the resource situation for the subject NP of the subsequent sentence in a coherent piece of discourse.

### 3.3.3 Epistemically specifics

**Barwise & Perry's (1983) account of the referential attributive distinction:**

Barwise & Perry (1983) give an account of the referential/attributive distinction in situation-theoretic terms. There are three semi-technical notions which they use in order to explain their ideas: *the object described* by a description; *the describing condition*; and *the constituents of an interpretation.* Consider the definite description 'the president of the U.S.'. As Bill Clinton is the unique person who (currently) fits the description, he is the object (currently) described by this description. The describing condition in this example is simply being the president of the United States. Barwise & Perry take the interpretation of a statement to be the collection of situations described by the statement. Any object, property, relation, or location that appears in a situation is a constituent of the situation. If something is a constituent of every situation described by the statement then it is a constituent of the interpretation of the statement. Consider the following example.

(179) Ronald Reagan is sneezing.

The interpretation of an utterance of this sentence at a given time is the set of situations that have Ronald Reagan sneezing at that time. That is, Reagan will be a constituent of that situation. This claim seems to be an uncontroversial one. However, the same clarity does not apply to an utterance of the following sentence, say, in 1982 (i.e. at a time Ronald Reagan was the president of the United States).

(180) The president of the U.S. is sneezing.

Will Ronald Reagan be a constituent of the interpretation of this statement? Barwise & Perry point out that there are three different answers which different philosophers would give to this question.

Russell's answer to this question would be no. "Russell would say that the statement in question is true if there is one and only one president of the United States, and that person is sneezing. There are various ways this idea might be built into situation semantics, but one can see that the result would always interpret the statement with [situations] in which various individuals satisfied the condition of being president. Some of these would not have Reagan in them at all, and so he would not be a constituent of the interpretation. On the other hand, being president would be a constituent. Each of the [situations] would be defined at the present time, and each would consider the property of being president at that time. Russell's theory puts the describing condition into the interpretation, but not the described individual" (Barwise & Perry 1983:146).

Strawson would give a positive answer to the question raised above. On his theory of descriptions, the described individual, but not the describing condition, is a constituent of the interpretation. Therefore, he would say that Reagan is a constituent of the interpretation of the statement made in (180).

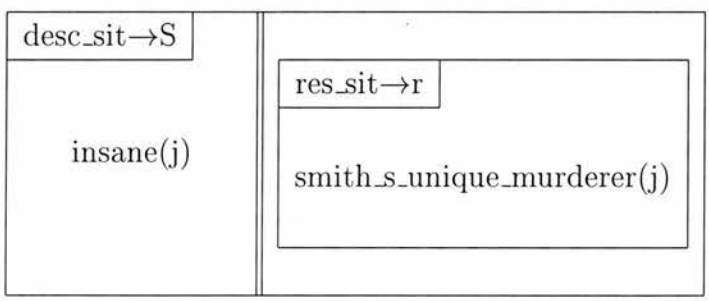
A third answer is the one that would be given by Donnellan. If the description is used attributively, the describing condition (i.e. being the president of the U.S.) is a constituent of the interpretation. If it is used referentially, the described individual (i.e. Ronald Reagan) is a constituent of the interpretation. In other words, in Donnellan's approach the statement would be ambiguous between two different interpretations, which result from the two possible uses of the description in question.

Barwise & Perry adopt Donnellan's approach to the matter. Consider Donnellan's well-known example once more:

(181) Smith's murderer is insane.

In a referential use of the description 'Smith's murderer', an appropriate resource situation (i.e. a situation where there is a unique individual being Smith's murderer) will be fixed in order to get a particular individual satisfying the description. This individual, but not the describing condition, will be a constituent of the interpretation. Suppose that r is the appropriate resource situation in a particular referential use of the definite description in (181) and it gives us Jones, denoted by the constant j, as the individual murdering Smith. Then the described situation will be constrained as follows:

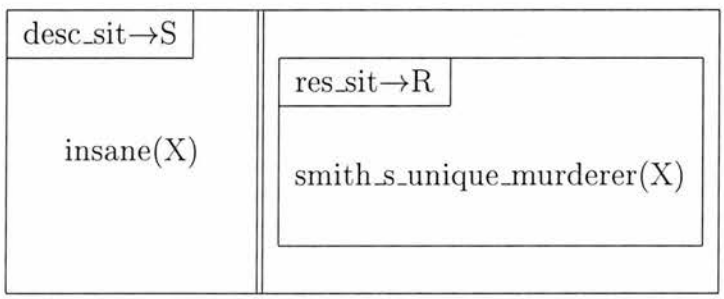
(182)




Whichever particular situation the described situation parameter, S, is anchored to, it will have Jones in it. That is to say, Jones will be a constituent of all possible situations described by the utterance. Hence, the definite description will be referentially used.

In an attributive use of the definite description in (181), on the other hand, the resource situation related to the definite description will be left unfixed. Therefore, the individual satisfying the describing condition of being Smith's murderer will be indeterminate. This means that the interpretation will have no particular individual as its constituent. This condition on an attributive use can be captured as follows:

(183)




What the speaker has said will be true if Smith's murderer, whoever it turns out to be, is insane, be it Jones, Mary, or someone else. That is, to make the utterance true, the described situation parameter can be anchored to any particular situation which has an individual that murdered Smith and that is insane.

Barwise & Perry place a second condition on an attributive use: the resource situation must be identical with the described situation. In other words, according to them, in an attributive use the situation being described is also serving as the resource situation. This ensures that the describing condition (provided by the definite description) is a constituent of the interpretation. That is, the described situation must be defined on that describing condition, too.

**A problem with Barwise & Perry's account:**

However, Soames (1986) notes that Barwise & Perry's latter view runs into a serious problem when it is applied to examples like the following:

(184) The cook is more experienced than the cook who prepared the main course.

Each of the definite descriptions in this example can be used attributively. A possible context "might be one in which two cooks prepare the food for a party (at the same time and in the same kitchen) –one cooking the main course, the other the dessert. A guest who has no idea who cooked what might truly utter [184], while munching some dessert" (p. 357). According to Barwise & Perry's analysis, the interpretation of (184) in the given context is the type of situation $s$ such that

1. there is exactly one individual, $a$, who is a cook in $s$;

2. there is exactly one individual, $b$, who is a cook who prepared the main course in $s$; and

3. $a$ is more experienced than $b$ in $s$.

Now, exploiting the fact that a cook who prepares the main course is a cook, we see that $a$ must be identical with $b$. This is because the resource situation, which is also the described situation, must donate a unique cook for the definite description 'the cook' to be felicitously used. "But then, since there is no real (or actual) situation in which an individual is more experienced than himself [at the same location], there is no real (or actual) situation of the type required by the interpretation of [184] in the context. Thus, Barwise and Perry will wrongly predict it to be false" (p. 357).

In order to avoid this problem, we will disregard the second condition which Barwise & Perry's analysis places on attributive uses, namely that in an attributive use of a definite description the described situation serves also as the resource situation for the definite description. We put forward the following three conditions to characterise the referential and attributive uses of definite descriptions:

1. in a referential use of a definite description the resource situation related to the description (and hence, the referent of the description) is fixed;

2. in an attributive use of a definite description the resource situation related to the description (and hence, the referent of the description) is left unfixed;

3. in both the referential and attributive uses of a definite description, the resource situation related to the description will be distinct from the described situation (i.e. the situation described by the smallest sentence containing the description).

Therefore, (182) and (183) will be typical representations for sentences with referentially and attributively used definite descriptions.[15]

**A general characterisation of the (epistemically) specific/non-specific distinction:**

[15]See Ishikawa (1995, 1996) for an essentially similar treatment of the referential/attributive distinction in a situation-theoretic framework.

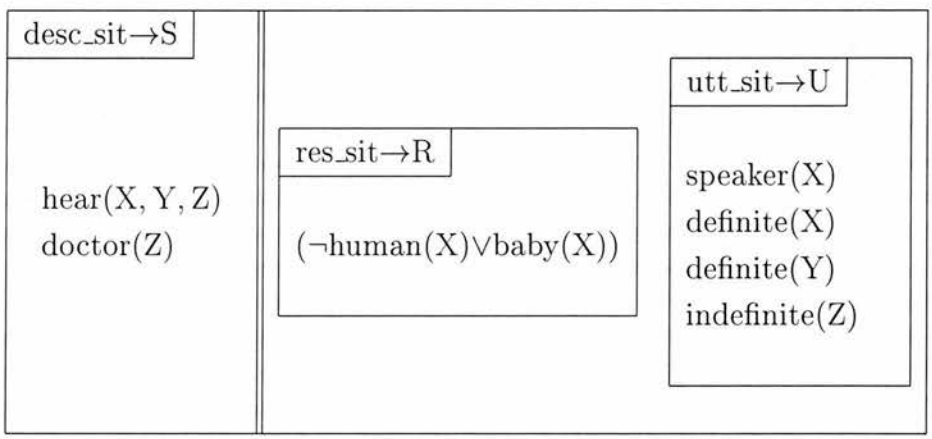
We take the first two conditions above apply also to the specific/non-specific distinction in general. As for the third condition, we consider it as a general requirement only on strong readings. As we have seen above, the requirement that the resource situation of an attributively used definite description must be distinct from the described situation results from the definiteness of the description, not its attributiveness. Consider the following example:

(185) Q: Why do you take it so seriously?

A: Because I heard it from *a doctor*.

As we already discussed (cf. Section 2.2.3), it is most likely that the italicised indefinite in this example will be attributively interpreted. It seems quite natural to take the describing condition of being a doctor to be a constituent of the interpretation of the response utterance. Every situation described by this utterance must have a doctor in it, but not necessarily the same one at all. That is to say, what matters here is not the individuality of the doctor but the fact that s/he appears in the situation with the attribute of being a doctor. (186) represents the indicated interpretation of the utterance.

(186)




The resource situation for *a doctor* is the described situation itself. The denial or questioning of the existence of such a situation will also be the denial or questioning of the existence of an entity referred to by this NP. This can be observed in the following examples, with *a doctor* being attributively used.

(187) Don't take it so seriously. You did not hear that from *a doctor*.

(188) Why do you take it so seriously? Did you hear that from *a doctor*.

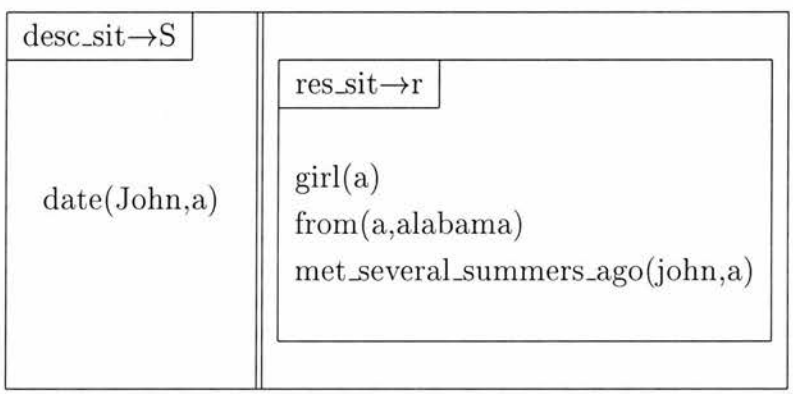
In the contexts above, the existence of a doctor (as the referent of the indefinite) is neither presupposed nor entailed. The denial or questioning of the existence of the described situation brings about also the denial or questioning of the existence of a doctor as the referent of the indefinite.

Consider, now, the following example:

(189) John is dating *a girl from Alabama that he met several summers ago.*

As will be recalled from Section 2.2.3, according to Partee, the italicised indefinite in this sentence is most likely to be interpreted referentially. The reason for this preference, Partee argues, is that this NP can be much more easily be thought of as being used to 'name' a particular individual with its descriptive content having no particularly strong semantic relation to what is asserted in the sentence. Let us give a situation-theoretic wording to what has been said: In the most natural interpretation of sentence (189) the indefinite is related to a fixed resource situation, which donates a particular individual as its referent. This individual has to be a constituent of every possible situation described by the sentence (or, more correctly, by the utterance of the sentence). Besides, the describing condition associated with this individual (namely *being a girl from Alabama that he/John met several summers ago*) constrains the resource situation not the described one. This renders it less significant with respect to what is asserted in the utterance. Ignoring the irrelevant details, the representational expression of this interpretation will be like this:

(190)




### 3.3.4 Strong quantifiers

We do not aim to give a through analysis of quantification in natural language or its treatment in situation theory. Our sole aim is to provide a plausible account of strong

quantification based on the described situation vs. resource situation distinction.

Our treatment of strong quantification will rest on the following situation-theoretic assumptions:

1. Situations can be used as domains of quantification.
2. Parameters for situations can be quantified over.[16]

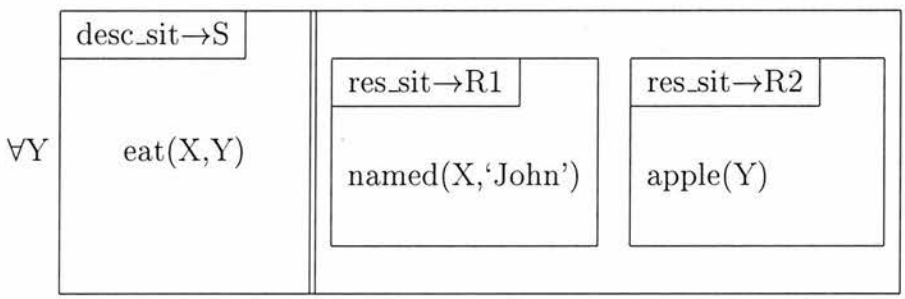
We will treat strong quantification over a limited domain and strong quantification over a non-limited domain differently. The former will be considered as quantification over only parameters for individuals but the latter will involve quantification over parameters for situations, as well.

To start with strong quantification over a limited domain, consider the following example:

(191) John ate all the apples.

Ignoring the irrelevant details, we will represent the meaning of this sentence as follows:

(192)




The resource situation R2 serves to limit the domain of quantification for the universal quantifier. In other words, the quantifier quantifies over the entities satisfying the condition of being an apple in R2.

[16]These two points (i.e. assumptions 2 and 3) are also exploited by Robin Cooper (1993) in developing a situation-theoretic analysis of generalized quantifiers. See also Richard Cooper (1990, 1991) for the treatment of generalized quantifiers in situation theory. As we do not adopt the generalized quantifier approach (where natural language determiners are considered to denote relations between sets), we will not go into these analyses.

In the examples above, the domain of quantification is limited. (191) does not assert that John ate all apples in the world. In other words, this sentence does not say that John ate any apple or apples in any possible situation. Rather, what is asserted in this sentence is linked to a certain situation containing a set of apples.

Before turning to the question of how to deal with universal quantification over an unlimited domain, we would like talk about a proposal about the semantics of characterising (or generic) sentences, namely the *dyadic operator analysis of characterising sentences* (cf. Kamp 1981; Kratzer 1981, 1988; Heim 1982; Rooth 1985; Schubert & Pelletier 1987, 1989; Diesing 1988, 1992; Carlson 1989; Wilkinson 1991; Krifka et al 1995; inter alia).

The dyadic operator analysis of characterising sentences is a 'relational' analysis. It is based on the assumption that characterising sentences use a specific relation to relate two semantic constituents to each other: the *restrictor* (or *restrictive clause*) and the *matrix* (or *nuclear scope*). A crucial tenet of the dyadic analysis is that a dyadic quantifier binds all the variable in the restrictor, and variables that appear only in the matrix are bound existentially. Below is the general form of dyadic quantification, where **Q** is a dyadic operator (cf. Krifka et al 1995):

(193) $\mathbf{Q}x_1,..,X_i[\mathbf{Restrictor}[x_1,..,X_i];\ \exists y_1,..,y_j\ \mathbf{Matrix}[\{x_1\},..,\{x_i\},\ y_1,..,y_j]]$

The notation $\phi[\ ...\ x_m\ ...\ ]$ is a formula where $x_m$ occurs free, and $\phi[\ ...\ \{x_m\}\ ...\ ]$ is a formula where $x_m$ is a variable that possibly occurs free.

Let GEN be the generic quantifier that relates the restrictor and matrix of characterising sentences. Then the characterising reading of:

(194) A potato contains protein.

is represented as:

(195) GENx[potato(x); ∃y[protein(y) & contain(x,y)]]

An important property of characterising sentences is that they, in general, allow for exceptions. For example, if an occasitional potato lacks protein, (195) can still be true. Universally quantified sentences, on the other hand, do not allow for exceptions. Therefore, the following sentence would be false in a situation where a potato does not contain protein:

(196) a. Every potato contains protein.

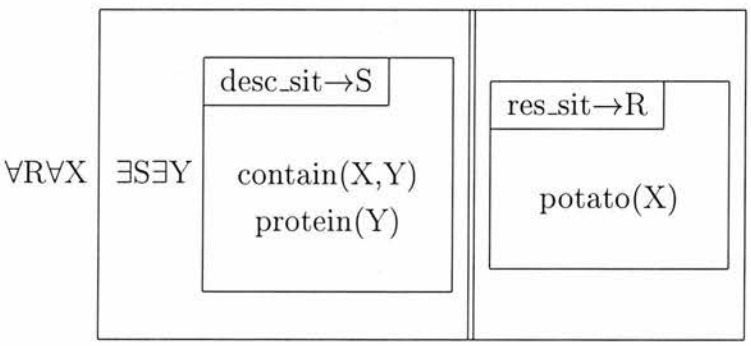
b. ∀x[potato(x); ∃y[protein(y) & contain (x,y)]]

We assume that there is no essential difference between the restrictor/matrix analysis of sentences and the distinction we make between the semantic material that directly constrains the described situation and the semantic material that constrains the resource situations that are exploited to describe that situation. We propose to treat unlimited strong quantification in a fashion similar to the dyadic analysis. We suggest that in an unlimited interpretation of a strong quantifier:

1. the parameter for the resource situation related to that quantifier and the parameter for the individual donated by that resource situation are bound by the given strong quantifier;
2. and the parameter for the described situation and all other parameters that appear only in the infons supported by the described situation are bound by the existential quantifier.

For example, (197) will be the situation-theoretic representation that corresponds to (196b):

(197)




### 3.3.5 Conclusion

In this section (i.e. Section 3.3) we have offered a situation-theoretic treatment of strong readings where the resource situation for the strong NP is different from the described one. As should be recalled from the previous chapter, strongness always necessitates the use of accusative morphology in the DO position of Turkish sentences. Clearly, there is entire compatibility between our account of strong readings

and our claim that it is the distinctness of its resource situation and the described situation that forces a Turkish DO to carry case morphology.

## 3.4 Noun incorporation

### 3.4.1 Introduction

Frawley (1992) points out that some verbs in English "allow their semantically predictable objects to *incorporate*, or fuse, with a verb to form a new compound verb with the same meaning as the separate verb plus its individuated direct object: *fish for trout/trout fish, watch birds/bird watch, tend the bar/bartend*" (p. 64). Though different languages may display variances in structural and interpretive terms, *noun incorporation* seems to invariably refer to the phenomenon where there is a certain kind of fusion between the verb and one of its arguments. The verb of a sentence provides a relation of an infon which is supported by the situation described by the sentence. Plausibly, noun incorporation is a strategy used to constitute more specific relations by integrating extra semantic material to that of the verb. In this way, the semantic content of the (incorporated) nominal becomes part of the described situation.

In this section, we will look at the formal and interpretive aspects of the incorporation phenomenon in Turkish. Our discussion will mainly be concerned with the incorporation of direct objects. We will see that the most apparent feature of the incorporated objects in Turkish is that they do not carry accusative morphology. From the brief characterisation of the incorporation phenomenon given above it follows that an incorporated nominal does not come with a distinct resource situation. Its semantic material directly goes into the described situation. Therefore, the inability of an incorporated Turkish DO to carry case morphology should be considered to be another piece of evidence supporting our claim that the lack of case morphology in the DO position of Turkish sentences indicates that the NP occupying this position is not associated with a resource situation that is distinct from the described situation. Let us now go into a deeper discussion of the incorporation phenomenon as manifested in Turkish.

### 3.4.2 The incorporation of direct objects

**A rough characterisation:**

Nilsson (1984) describes *object incorporation* in Turkish as follows:[17]

> Transitive verbs in Turkish may take bare noun objects according to a very simple and productive pattern... The noun is put immediately before the verb and cannot be separated from that except by certain particles [e.g. *dA* 'also'], as well as it is not to be marked with any of the nominal suffixes... Semantically, the bare noun completes the meaning of the verb by specifying the type of thing involved in the action or event. (p.113)

Before going into a more elaborate analysis of object incorporation in Turkish, we will have a brief look at the points touched upon in this quote. Let us start with the semantic status of incorporated objects. Consider the example in (198) (from Nilsson 1984).

(198) Ali halı al-ıyor.
Ali carpet buy-prog
'Ali buys a carpet/carpets.'

An observation made very commonly about incorporated nominals is that they fail to introduce a discourse referent. They denote a concept or property that coalesces with the verbal predicate to narrow down the type of situation referred to. In the example above, Nilsson notes, "without introducing any referent to be considered by itself the noun *halı* relates to the concept of 'carpet' and categorises the activity of buying as one of carpet-buying" (p.113). Notice also that the incorporated noun in question is left unspecified with respect to number distinction (cf. the English translation). This should be taken as a direct result of the 'non-referential' status of this noun.

As for the formal aspects of object incorporation in Turkish, there are three points mentioned in the above quote:

[17] In this subsection, whenever we talk about *object incorporation*, this should be understood as the incorporation of direct objects.

First, neglecting some exceptional cases, the incorporated object cannot be separated from the immediately preverbal position. The following example suggests that this is really the case:

(199) a. Ali geçen hafta halı al-dı.
Ali last week carpet buy-pst
'Ali bough a carpet/carpets last week.'

b. *Ali halı geçen hafta al-dı.

c. *Geçen hafta halı Ali al-dı.

The sentences in (199b) and (199c) will be unacceptable in any possible discourse context.

Second, cases exceptional to the first observation include those where the object is followed by certain particles, such as *dA* 'also' and *bile* 'even':

(200) Ali halı da/bile al-dı.
Ali carpet also/even buy-pst
'Ali also/even bought a carpet/carpets.'

Third, the incorporated object is not marked with any nominal suffix:

(201) Ali halı-yı al-dı.
Ali carpet-acc buy-pst
'Ali bought the carpet.'

The direct object in (201) evokes a certain definite discourse-referent. It does not incorporate into the verb in any way.

**Further semantic issues:**

The ability to take anaphoric pronouns is usually regarded as another semantic criterion to distinguish between incorporated and non-incorporated nominals. Many researchers observe that anaphoric reference to incorporated nouns is at least strongly disfavoured (cf. Mithun 1984; Hopper & Thompson 1984, 1985; Frawley 1992). (202) (adopted from Erguvanlı 1984) and (203) exemplify this fact for Turkish:

(202) a. Ali kaç gündür bir resim$_i$ yap-ıyor-du, nihayet bugün o-nu$_i$
Ali how.many day one picture make-prog-pst finally today it-acc
bit-ir-di.
finish-pst

'Ali was making (painting) a picture for days, finally he finished it today.'

b. Ali kaç gündür resim$_i$ yap-ıyor-du, nihayet bugün
Ali how.many day picture make-prog-pst finally today
(??o-nu$_i$/??o-nlar-ı$_i$) bit-ir-di.
it-acc/ it-pl-acc finish-pst
'Ali was painting (picture-making) for days, finally he finished today.'

(203) a. Oya göl-de bir balık$_i$ tut-tu. O-nu$_i$ akşam yemeğ-i-ne
Oya lake-loc one fish catch-pst it-acc evening meal-poss3-dat
pişir-ecek.
cook-fut
'Oya caught a fish$_i$ in the lake. She will cook it$_i$ for dinner.'

b. Oya göl-de balık$_i$ tut-tu. ??O-nu$_i$/??o-nlar-ı$_i$ akşam
Oya lake-loc fish catch-pst it-acc / it-pl-acc evening
yemeğ-i-ne pişir-ecek.
meal-poss3-dat cook-fut
'Oya fished in the lake. She will cook ??it/??them for the dinner.'

The (b) sentences, where the pronouns are intended to anaphorically refer to the incorporated nouns sound considerably odd.

Notice that in the examples above, the verb and the incorporated nominal form a semantic unit. More specifically, in these examples the verb and the incorporated nominal designate together a relation that is conceived as a unit, namely that of *carpet-buying*, that of *painting* and that of *fishing*. The lexicalisation of the latter two with a single word in English is an overt manifestation of the semantic unity in question. Below are some further examples of the cases where Turkish employs two separate words in order to encode a single relation that is expressed by a single word in English (from Erguvanlı 1984):

(204) a. *ders çalış-mak* 'to study'
lesson study/work-inf

*şarkı söyle-mek* 'to sing'
song say-inf

*yemek yap-mak* 'to cook'
food make-inf

b. *günah çıkar-mak* 'to confess'
sin take.out-inf

*göz kırp-mak* 'to wink'
eye clip-inf

*avuç aç-mak* 'to beg'
palm open

The expressions in (b) are of a more idiomaticised type. Therefore, the coalescence of the meanings of the verbs and nouns take place to a deeper extent. We will not discuss this issue. The interested reader is referred to Nilsson (1984).

It seems plausible to argue that the incorporation phenomenon in Turkish has come into existence as a linguistic device in order to encode relations for which there is no single corresponding word in the language. So, from a semantic point of view, there does not seem to be much difference between a single verb with no incorporated nominal and a compound made up by a verb and an incorporated nominal. We can take it that both provide a relation for an infon supported by the described situation. That is, from the semantic point of view, noun incorporation (in Turkish) serves to indicate that the semantic material provided by one of the arguments of the verb, by the incorporated nominal, is an integrated part the material that directly defines the described situation.

In order to capture the semantic properties of noun incorporation at a representational level, we propose to introduce *compound* relations into our notational system, in addition to the *basic* ones. We define a compound relation as follows:

(205) A compound relation is a binary tuple such that:

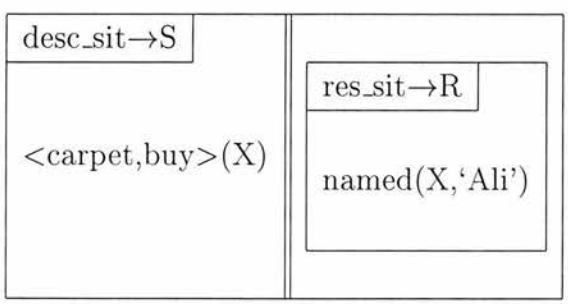
a. the second argument is a relation provided by a verb; and

b. the first argument is a property (i.e. a unary relation) provided by a nominal incorporated to that verb.

For example, (206a) is the compound relation corresponding to *carpet-buying* and (206b) is the representation of a reading of the sentence in (198) (ignoring many irrelevant details):

(206) a. <carpet,buy>

b.

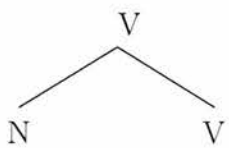


### The syntax of the incorporation phenomenon and case marking

At this point, a question may come to mind as to whether the semantic unity between an incorporated object and a verb is also accompanied by a syntactic (or lexical) unity between these two items. In order to give an answer to this question, we will deviate from the central topic of this chapter (namely, the semantics of Turkish accusative morphology and the described situation vs. resource situation distinction) and approach the incorporation phenomenon in Turkish from a syntactic point of view. This will lead us to a formulation of case marking strategies in Turkish.

Nilsson (1984) suggests the following structural description for object incorporation in Turkish:

(207)




Ignoring the details, in Nilsson's account object incorporation (in Turkish) is a phenomenon where the object is adjoined to the verbal head in order to form a new compound head.

Erguvanlı (1984) puts forward several arguments both against and in favour of an account based on the syntactic unity of a verb and its incorporated argument. Two of her arguments in favour of such an account have already been mentioned:

First, no other NP or adverb may intervene between the (semantically) incorporated direct object and the verb:

(208) a. Murat *isteksiz* kitap oku-yor.
Murat unwillingly book read-prog
'Murat is reading a book unwillingly.'

b. *Murat kitap *isteksiz* oku-yor.

Second, the (semantically) incorporated DO cannot occur after the verb, though this seems not to violate the first constraint:

(209) *Murat *isteksiz* oku-yor kitap.
Murat unwillingly read-prog book

Erguvanlı's third argument is based on the claim that the incorporated DO cannot head relative clauses, which, according to her, means that "it cannot be singled out, as an independent constituent, from the syntactic unit it forms with the verb" (p.24). Below is one of the examples she gives as evidence supporting this point:

(210) a. *Nazan [hazm-ı zor ol-an] *yemek* pişir-iyor.
Nazan digestion-poss3 hard be-sp food cook-prog

b. Nazan [hazm-ı zor ol-an] *bir yemek* pişir-iyor.
Nazan digestion-poss3 hard be-sp one food cook-prog
'Nazan is cooking a food (dish) that is hard to digest (lit. whose digestion is hard).'

The arguments Erguvanlı argues to be against the syntactic unity of the DO and the verb in a case of object incorporation are the following:

First, we might expect the complex verb built up by an incorporated DO and a verb to be detransitivized "and since intransitive verbs do not usually passivize we might anticipate that the object-incorporated verbal unit would not passivize. However, this is not the case in Turkish" (p.25), as the following examples illustrate:

(211) a. Biz-im ev-de çok gürültü ol-uyor, hiç ders
we-gen1 house-loc much noise be-prog at.all lesson
çalış-a-mı-yor-um.
study-abil-neg-prog-1sg
'There is too much noise at our house, I cannot study at all.'

b. Biz-im ev-de çok gürültü ol-uyor, hiç ders
we-gen1 house-loc much noise be-prog at.all lesson
çalış-ıl-mı-yor.
study-pass-neg-prog
'There is too much noise at our house, one cannot study at all.'

These examples show that a complex verb can be detransitivized.

The second argument is based on an observation we have already made: "Although another NP or an adverb may not intervene between the object and the verb, there are a set of particles *dA* 'too/also'; *bile* 'even'; *mI* 'yes-no' question marker) that can come between the object and the verb" (p.26). According to Erguvanlı, such an intervention breaks the syntactic unity of the DO and the verb.

Thirdly, Erguvanlı observes that whether a DO can be separated from the verb by an adverb is dependent on the presence or absence of case-marking morphology on

the DO, rather than on the criterion of whether this DO is an incorporated one or not. She notes that an indefinite DO that does not carry accusative morphology behaves exactly like an incorporated DO in this respect. She illustrates this fact with the following examples:

(212) a. Murat *aceleyle* bir kitap oku-yor.
Murat hurriedly one book read-prog
'Murat is reading a book hurriedly.'

b. *Murat bir kitap *aceleyle* oku-yor.

(213) a. Murat *aceleyle* bir kitab-ı oku-yor.
Murat hurriedly one book-acc read-prog
'Murat is reading a book hurriedly.'

b. Murat bir kitab-ı *aceleyle* oku-yor.
Murat one book-acc hurriedly read-prog
'Murat is reading a book hurriedly.'

In order to avoid possible misunderstandings, we should add that this observation holds not only for adverbs but also for arguments that might possibly intervene between the DO and the verb, as shown in the following examples:

(214) a. Murat *Oya-ya* bir kitap ver-di.
Murat Oya-dat one book give-pst
'Murat gave Oya a book.'

b. *Murat bir kitap *Oya-ya* ver-di.

(215) a. Murat *Oya-ya* bir kitab-ı ver-di.
Murat Oya-dat one book-acc give-pst
'Murat gave Oya a book.'

b. Murat bir kitab-ı *Oya-ya* ver-di.
Murat one book-acc Oya-dat give-pst
'Murat gave Oya a book.'

As for our own view on the matter, we hold that Turkish grammar does not have a specific syntactic or lexical rule to form a compound unit out of an incorporated object and a verb. In Section 4.2.4, we will make two crucial claims about Turkish sentence structure: One, the constituents within the VP are organized in a flat structure in accordance with the Subject-Direct Object-Indirect Object-Verb (S-DO-IO-V) order. Two, if the utterance is meant to have an interpretation where

the verb is included within the asserted or questioned part of the sentence (not the presupposed part),[18] the sentence stress and accent or a yes-no question marker must always be associated with the leftmost (non-empty) constituent of the VP. As will be shown in the next chapter, in a case where the sentence accent falls on a VP-external constituent the asserted (or questioned) portion of the sentence is confined to that constituent. We claim that a semantically incorporated object does not differ from a non-incorporated object in terms of the syntactic position it occupies in the phrase structure. The parallel between the examples in (217) and (218), where the sentences are supposed to be uttered as a reply to the question in (216), support this claim:[19]

(216) Orada NE ol-uyor?
there what happen-prog
'What is happening there?'

(217) a. Oya çocuk-lar-a ELMA-LAR-I ver-iyor.
Oya child-pl-dat apple-pl-acc give-prog
'Oya is giving the children the apples.'

b. *Oya ÇOCUK-LAR-A elma-lar-ı ver-iyor.

(218) a. Oya çocuk-lar-a ELMA ver-iyor.
Oya child-pl-dat apple give-prog
'Oya is giving the children apples.'

b. *Oya ÇOCUK-LAR-A elma ver-iyor.

In the given context, the verb needs to fall in the asserted part of the response sentence, as it will encode a piece of non-presupposed but new information. Only the (a) sentences can be assigned such an interpretation. Each of the (b) sentences, where the sentence accent falls on the dative marked constituent (i.e the indirect object), is restricted to a reading where the asserted portion contains only the dative NP and the rest of the sentence encodes presupposed information. The paraphrases of these sentences, respectively, are:

(219) It is the apples that Oya is giving the children.

(220) It is apples that Oya is giving the children.

[18]In the next chapter, we will refer to the asserted/questioned and presupposed portions of the sentence as *focus* and *background*, respectively.

[19]Recall that sentence elements that appear in small caps are intended to be those that are associated with the sentence stress and path accent.

Given that the linear arrangement of both sentences deviates from the unmarked S-DO-IO-V order, there is nothing surprising about them being obliged to receive an interpretation where the verb necessarily falls in the presupposed portion of the sentence. In both cases, the dative argument is a displaced (hence, VP-external) constituent. Therefore, the verb cannot be included in the asserted portion. If Turkish had a specific rule to produce complex verbs (constituted by an object and a verb), then one could expect the object and verb in (218) to form a two-argument complex verb, with the dative argument being able to serve as the leftmost VP-internal constituent in an utterance like (218b). However, the inability of (218b) to receive an interpretation where the verb is included within what is asserted indicates that it is (221a), but not (221b), that is the syntactic description of this utterance which is most compatible with our analysis of Turkish sentence structure:

(221) a. $[_S$ Oya$_i$ ÇOCUK-LAR-A$_j$ $[_{VP}$ e$_i$ elma e$_j$ ver-iyor]].

b. $[_S$ Oya$_i$ $[_{VP}$ e$_i$ ÇOCUK-LAR-A$_j$ $[_V$ elma ver-iyor]]].

Having stated our position with respect to the question of the syntax of object incorporation in Turkish, we need to deal with the arguments Erguvanlı (1984) mentions as in favour of the syntactic unity of the incorporated object plus verb pairs. Let us start with the third one, namely the claim that "[an incorporated DO] cannot head relative constructions". We argue that the unacceptability of examples like (210a) has nothing to do with the syntactic features of the constituents, but it is of a pragmatic nature. At first glance, the sentence in (210a) sounds quite odd because *cooking foods which are hard to digest* cannot be easily conceived as a relation that is individuated as one, albeit bisegmental, semantic unit in our linguistic community. However, a sentence with the same object and verb, such as (222), could be totally acceptable in a community where it is ritual to cook hardly digestible dishes for a certain religious ceremony:

(222) Oya yarın ki tören için *hazmı zor ol-an yemek*
Oya tomorrow rel.marker ceremony for digestion-poss3 hard be-sp food
pişir-iyor.
cook-prog
'Nazan is cooking a dish/dishes whose digestion is hard for tomorrow's ceremony.'

The unspecified status of the DO with respect to number distinction and its lack of

a determiner are, respectively, the interpretive and formal signs of its being incorporated into the verb.

This example also illustrates that the incorporation phenomenon in Turkish cannot be confined to those cases where a single noun incorporates to a verb. Apparently, provided that it denotes an appropriate property, the incorporated nominal may have more complex structures. The italicised DOs in the following examples felicitously incorporate into their verbs, as it can be observed from the ambiguity the translations display in terms of number distinction:

(223) Kaya tatil boyunca *macera kitab-ı* oku-du.
Kaya holiday during adventure book-poss3 read-pst
'Kaya read a book of adventure/books of adventure during the holiday.'

(224) Kaya-nın mide-si ağrı-yor, çünkü *baharatlı yemek* ye-miş.
Kaya-gen3 stomach-poss3 ache-prog because spicy dish eat-pst
'Kaya has a stomach-ache, because he has eaten a spicy dish/spicy dishes.'

The flexibility of the form of the incorporated nominal can be taken as a further indication of the fact that the incorporation phenomenon is of a semantic nature in Turkish.[20]

As for Erguvanlı's first and second arguments in favour of the syntactic unity of the incorporated object and the verb, they express the fact that the incorporated object cannot be separated from the immediately preverbal slot except by certain particles. As Erguvanlı herself notes later on, this constraint applies to not only incorporated DOs but also DOs that do not carry case morphology. We propose that this constraint can be account for by means of a principle similar to the Case Filter of Government-Binding (GB) theory:

(225) *The Case Filter*

*NP, where NP has lexical content but no Case.

The exact nature of case assignment is currently a controversial issue. In the GB framework, it has generally been assumed that all nominals receive case and that case can be assigned structurally, semantically, or lexically. Very roughly, structural case is assigned to a nominal in a particular structural position; semantic case is

[20]We will not go into the question of how complex properties such as those denoted by the incorporated DOs in (222)-(224) can be represented in our framework of representation.

assigned based on the meaning of the nominal it is assigned to; and lexical case is assigned on the basis of lexical information (King 1993). It seems that Turkish uses all three strategies to assign case. Semantic case is assigned to some temporal expressions (e.g. *dün* 'yesterday', *yarın* 'tomorrow', *pazar günü* 'Sunday', *gelecek yıl* 'next year') and it is locative:

(226) *Yarın* futbol oyna-yacağ-ım.
tomorrow football play-fut-1sg
'I will play football tomorrow.'

If such an expression needs to be assigned a case other than locative, this is done lexically:

(227) Biraz dinlen-mek için sabırsızlıkla *yarın-ı* bekli-yor-um.
a.little rest-inf in.order.to impatiently tomorrow-acc wait.for-prog-1sg
'I am impatiently waiting for tomorrow in order to have a little rest.'

Lexical case assignment is done in accordance with the following principle:

(228) *Lexical Case Assignment in Turkish:*

Subjects and objects carrying case morphology receive their case lexically; subjects are assigned nominative case, objects are assigned the case encoded by their case suffix.

Finally, we argue that Turkish uses a structural strategy to assign accusative case to direct objects. We claim that NPs not case assigned in another way (i.e. lexically or semantically) receive accusative case if they are adjacent to a lexical head (e.g. a verb) or a particle such as *dA* 'also' and *bile* 'even'. It is for this reason that DOs that do not precede a particle are restricted to the immediately preverbal position. They have to be there in order to receive accusative case from the verb. If, however, they are followed by a case assigning particle, they need not be adjacent to the verb (as it is not their case assigner anymore). Observe the contrast between the following two examples:

(229) a. Oya Kaya-ya *bir elma* ver-di.
Oya Kaya-dat one apple give-pst
'Oya gave Kaya an apple.'

b. *Oya *bir elma* Kaya-ya ver-di.

c. **Bir elma* Oya Kaya-ya ver-di.

(230) a. Oya Kaya-ya *bir elma* da ver-di.
Oya Kaya-dat one apple also give-pst
'Oya also gave Kaya an apple.'

b. Oya *bir elma* da Kaya-ya ver-di.

c. *Bir elma* da Oya Kaya-ya ver-di.

In (229), the DO must be adjacent to the verb, as it is only from the verb that it can receive case. For this reason, the (b) and (c) sentences are ungrammatical. In (230), on the other hand, the direct object receives its case from the particle *da* 'also'. Hence, all the sentences are grammatical.

As it should have been noted, a working assumption in the proposal offered above is that empty constituents are not obstacles for adjacency. If this were the case, the direct object in (229a) would not be able to receive case from the verb, as it would be separated from it by an hypothetical trace left behind by the displacement of the dative argument. In fact, in the grammar we will develop for Turkish, we will adopt a more radical view of trace-like empty constituents. We will assume that traces are not phonetically null constituents but they are really non-existent in the phrase structure. See Pickering & Barry (1991) for a defence of this view in light of psycholinguistic evidence and Pollard & Sag (1994) for a traceless grammatical theory, namely the latest version of the Head-driven Phrase Structure Grammar (HPSG).

Admittedly, we cannot claim to have provided a complete analysis of the case marking system in Turkish. But, at least, we have given a plausible account of the restriction of incorporated objects to the immediately preverbal position without postulating the syntactic unity of the incorporated object and the verb, which would be a problematic hypothesis on many other grounds. In what immediately follows, we will see clearer examples of the fact that incorporated nominals which do not receive their case from the verb do not have to appear in the slot just before the verb.

### 3.4.3 The incorporation of arguments other than DOs

In the preceding subsection, we have claimed that only direct objects receive structural case in Turkish. It has been argued that subjects and oblique objects receive

their case lexically. Thus, we should expect that subject and oblique object arguments are not strictly restricted to the immediately preverbal position, even if there is a semantic coalescence between their meaning and that of the verb. Below, we will offer some examples that show that this expectation holds for Turkish.

**Subject incorporation**

A Turkish subject whose meaning fuses with that of the verb is mostly treated to be like an incorporated direct object in terms of its degree of freedom to leave the position just before the verb (cf. Nilsson 1985). However, as the following examples illustrate, there is a considerable difference between incorporated subjects and incorporated DOs in that respect:

(231) A: Oya-yı ARI sok-tu.
Oya-acc bee sting-pst
'Oya was stung by a bee/bees' or 'Oya was bee-stung.'

a. B: Oya-yı DEĞIL; KAYA-YI arı sok-tu.
Oya-acc not Kaya-acc bee sting-pst
'It was NOT Oya; it was KAYA who was bee-stung.'

b. B: Oya-yı DEĞIL; KAYA-YI sok-tu arı.
Oya-acc not Kaya-acc sting-pst bee
'It was NOT Oya; it was KAYA who was bee-stung.'

(232) A: Oya KITAP oku-yor-du.
Oya book read-prog-pst
'Oya was reading a book/books' or 'Oya was book-reading.'

a. B: Oya DEĞIL; KAYA kitap oku-yor-du.
Oya not Kaya book read-prog-pst
'It was NOT Oya; it was KAYA who was book-reading.'

b. B: Oya DEĞIL; *KAYA oku-yor-du kitap.

(231) and (232) are two dialogues that are assumed to take place between two hypothetical speakers, A and B. In the first dialogue, the incorporated nominal is the subject and, as (231b) shows, it does not have to appear in the slot just before the verb. As it receives case lexically, it is permitted to occur postverbally. In the second dialogue, the incorporated nominal is the direct object and, as (232b) illustrates, its appearance in a position other than the immediately preverbal one results in unacceptability. It is confined to this position in order to receive structural

case.[21]

### The incorporation of oblique objects

Hopper & Thompson (1984) point out that oblique nouns which fail to refer share, in many languages, many properties ascribed to incorporated nouns. The most common types of such expressions, which they refer to as *unspecified obliques*, "are expressions of location/direction, e.g. Eng. *at school/to school*, and incorporated instrumentals, of which English expressions like *by train* form a restricted set" (p.713). According to them, in English, "the unspecified oblique – though it is not, strictly speaking, incorporated – is characteristically used of institutions and routinized activities; but when the N stands for a particular physical entity, it appears in its full prototypical form, i.e. with determiners and the possibility of modifiers" (p.713). The two cases are respectively illustrated by (233a) and (233b):

(233) a. We went to school early yesterday.

b. We hid in the old abandoned school.

In Turkish, all oblique objects (i.e. those marked with a non-accusative case) receive their case lexically. As a result of this fact, an oblique object whose meaning coalesces with that of the verb to form a semantic unit can appear in many different sentential positions:

(234) a. Yarın sa-bah Oya *okul-a* gid-ecek.
tomorrow morning Oya school-dat go-fut
'Oya will go to school tomorrow morning.'

b. Yarın sabah *okul-a* Oya gid-ecek.

c. *Okul-a* yarın sabah Oya gid-ecek.

d. Yarın sabah Oya gid-ecek *okul-a.*

All the sentences above can be felicitously used in an appropriate context, with the dative object being (semantically) incorporated into the verb.

[21] In the next chapter, we will see that elements falling into the asserted portion of the sentence cannot occur post-verbally in Turkish. In order not to violate this constraint, we have established the discourse contexts in (231) and (232) in such a way that the subject NP in the former and the object NP in the latter encode presupposed information. That is, the unacceptability of (232b) has nothing to do with the indicated constraint.

## 3.5 Summary

The central claim of this chapter was that it is the distinctness of its resource situation and the described situation that forces a Turkish DO to carry case morphology. In Section 3.2, we provided evidence from Turkish showing that the lack of case morphology in the DO position of a sentence of this language necessarily means that the resource situation for the nominal occupying this position is the same as the described situation.

In Section, 3.3, we offered a situation-theoretic account of strongness where strong NPs are necessarily associated with resource situations which are different from described ones. This account enables us to give a plausible explanation of the seemingly incompatible facts noted at the outset of Section 3.3. As should be recalled, all strong NPs require accusative morphology in the DO position of Turkish sentences, but presuppositionality is not the ultimate criterion for the use of accusative morphology in this language. The reson for this is that in Turkish a strongly interpreted DO is obliged to carry accusative morphology, not because it is presuppositional, but because its resource situation is distinct from the described situation. There may be cases where the referent of an NP is existentially presupposed although the resource situation for this NP is the same as the described one (i.e. although the NP is weak). Such a case will arise when a portion of the described situation including the semantic material provided by the weak NP is presupposed. That is, the described situation itself can undergo a partition between presuppositional material and non-presuppositional material. The linguistic realisation of this partition will be the subject matter of the next chapter.

Finally, in Section 3.4, we examined the incorporation phenomenon in Turkish in its formal and interpretive aspects. The major points made in this section were the following. Incorporated DOs in Turkish are barred from carrying case morphology as a direct result of their semantic material being part of the described situation. The semantic unity between an incorporated nominal and the verb is not accompanied by a syntactic unity between these two items. A DO without case morphology is restricted to the immediately preverbal position in order to receive accusative case from the verb. This is a structural strategy Turkish uses to assign case: non-case-marked nominals in this language receive accusative case if they are adjacent to a lexical head. There are two other case assignment strategies employed in Turkish: semantic and lexical strategies. Semantic case is assigned to some temporal expressions (e.g. *dün* 'yesterday', *yarın* 'tomorrow') and it is locative. Lexical case

assignment applies to subjects and objects carrying case morphology. The former are assigned nominative case and the latter are assigned the case encoded by their case morphology.

# Chapter 4

# The Focus-Background Analysis of the Sentence

In this chapter, our main aim is to provide an account of the phonological and syntactic structuring of focus in Turkish, which captures the interactions between syntax and phonology and which remedies the defects in the previous accounts. However, in order to establish a formal and conceptual framework within which we can develop our account, we will first offer a general discussion of the notion of focus and the complementary notion of background.

## 4.1 Focus-background in general

### 4.1.1 Characterisation

**Identification of focus (a formal/operational characterisation):**

We will use the term *focus* to refer to a pragmatic phenomenon. We take focus to be what is discourse-pragmatically most relevant or what is the point of utterance. Clearly, characterising the notion of focus in this way leaves us on a very slippery ground. Resting solely on this characterisation, the identification of the constituent that serves as the focus of an utterance would be too imprecise. In order to get to a more stable ground, we need some operational tests for focus identification. Work in the Prague tradition proposes the question test for this purpose (cf. Sgall et al 1986). The idea is that the focus of a (declarative) sentence is that part of it that provides the answer it seems to respond in a particular context. (235) illustrates

three assignments of focus which the sentence 'John drank beer' receives according to the question test.[1]

(235) a. What did John do?
John [$_F$ drank beer].

b. What did John drink?
John drank [$_F$ beer].

c. Who drank beer?
[$_F$ John] drank beer.

Another operational test to identify the constituent that functions as focus, proposed by Chomsky (1971), is to look at how another speaker might object to the utterance supplying an alternative to the focus. For example, the (a), (b) and (c) sentences below would be natural (or discourse-coherent) responses to the declarative utterances in (235a), (235b) and (235c), respectively.

(236) a. No, he ate roast beef.

b. No, he drank wine.

c. No, Mary drank beer.

Another test totally in the same spirit as the one above is proposed by Erteschik-Shir & Lappin (1979). They call it the *lie test*. It serves to determine what constituent is the *dominant* one in the sentence. Their dominant constituent is essentially no different from what we call the focus of the sentence. (237) shows the network of dominance possibilities of a sentence which is obtained in accordance with the lie test:

(237) Speaker: John gave a book to Mary.
Hearer : That's a lie —
— It was Bill. (tests the subject for dominance)
— He sold it to her. (tests the verb)
— It was a magazine. (tests the direct object)

[1]Henceforth, the portion of the sentence that serves as the focus will be delimited by F-labelled square brackets.

— She wasn't at home. (tests the indirect object)

— He never managed to. (tests the whole VP)

— He has been in Europe for the last month. (tests the whole S)

Of these three types of test, we will use the question-test (i.e. the one proposed by the Prague School) to identify focal constituents.

**Focus as a complementary notion to presupposition:**

Excluding existential presupposition, there does not seem to be a difference between what is non-focal (i.e. backgrounded) and what is presupposed in an utterance.[2] Some linguists explicitly identify the complement of the focus (i.e. the background) with the presupposition(s) of the sentence (cf. Akmajian 1970, (1979); Chomsky 1971; Jackendoff 1972; Dahl 1974, inter alia). According to Dahl (1974), for instance, in the background-focus articulation of a sentence the background "normally conveys a statement which is presupposed to be true. For example, if 'John' is the focus of 'John is running', it is presupposed that someone is running" (p.3). In a somewhat more formal treatment of this view, the presupposition is obtained by replacing the focus of the sentence by an appropriate semantic variable,[3] e.g. x is running. In Jackendoff's (1972) account, abstracting over that variable gives us a *presuppositional set* and the statement made is true if and only if the focus is an element of that set. That is,

(239) $[_F$ john] is running. (e.g. as an answer to the question 'who is running?')

is true iff:

(240) John $\in$ $\lambda$ x(x is running).

---

[2]Existential presupposition is an issue that concerns the referential status of discourse entities. Focus and background, on the other hand, are used to refer to the pieces of information 'anchored' to these entities. As Prince (1988) and Vallduví (1990) (inter alia) point out, a distinction between the two phenomena will be necessary in order to avoid confusions in cases like the following:

(238) Who does John love?
John loves $[_F$ himself].

Here, the reflexive pronoun denotes a discourse-old (i.e. existentially presupposed) entity. But, this does not preclude it from encoding the focus of the sentence.

[3]See Jackendoff (1972) for details on what constitutes an appropriate semantic variable for this purposes.

The fact that the phenomenon characterised by the notion of background and the phenomenon characterised by the notion of presuppositionality are identical can also be observed in the sameness of the properties ascribed to these two phenomena. Firstly, they are both taken to be pragmatic. In fact, in earlier approaches the notion of presupposition was taken to be a **semantic** relation between sentences (cf. Karttunen 1973, Katz & Langendoen 1976). More precisely, presuppositions were defined as propositions that were **entailed** by a sentence and by its negation.[4] However, problems with this description soon became evident. We will mention here only two of such problems, which are pointed out by Green (1989): "First, for non-controversial entailments, asserting a sentence and one of its entailments results in an argument that is intuitively valid, although trivial [cf. (241)], but asserting a presupposition in this sort of context results in an argument that is intuitively invalid", as in (242).

(241) Jack has 5 children. Therefore Jack has more than 4 children.

(242) Dana regrets that Mr. D. was late. Therefore Mr. D. was late.

"Second, the description of presuppositions as propositions entailed by a sentence and by its negation is inadequate as a definition of presupposition because it would fail to correctly characterise presuppositions of all the sentence types that don't have negations" (p. 78). Green exemplify such sentences with the followings:

(243) a. Drat/Damn the pork wings.

b. Long live the present king of France.

(244) a. Here come the pork wings.

b. In waltzed the present king of France.

Encountering many other similar problems, linguists have largely abandoned the strictly semantic view of presuppositions and recognised a discourse-pragmatic aspect to that phenomenon.

As a second common feature of the notions of background and presupposition, consider the constancy-under-negation-or-interrogation property of presuppositions (cf. Section 2.5.2). When the focus of a sentence is operationally described as that

[4] *A entails B* iff whenever *A* is true, *B* is also true.

part of it that is questioned by a preceding question or that is denied by a subsequent declarative utterance, it is exactly the same property that is attributed to the background, as the background is the mere complement of the focus.

A third commonality that shows up in many characterisations of the notions of presupposition and background has to do with the mutual knowledge constraint. Green (1989) points out that what is presupposed need not always be mutual knowledge for both speaker and hearer. If a presupposition had always to be mutual knowledge, then the utterance of a sentence like (245) would sound unthinkably odd if the speaker did not think that the addressee know that the speaker had children. But in fact no such oddity would arise.

(245) Sorry I'm late – my children spilled milk on me, and I had to take the time to change my clothes.

Another striking example showing that a presupposition is not always known to the hearer is the following (from Green 1989):

(246) Nobody realizes that Geralda is more qualified for the position than any of the other candidates.

If the presupposed proposition must be assumed to be common knowledge, then we would predict that sentences like (246) are self-contradictory, although in fact, they are not.

Such observations led researchers to make a distinction between *neutralised* and *accommodated* presuppositions. If a presupposition is already in the context of utterance (i.e. it is a proposition shared by both the speaker and the hearer), it is said to be neutralised. If it is not (as exemplified above), it must be added to the context, so that a new enlarged context can be obtained against which the assertion will be evaluated. Such a presupposition is said to be accommodated.[5]

Similarly, many authors tend to relax the interaction between backgroundedness and oldness of a piece of information when characterising this phenomenon. Moser (1995) says that:

> The distinction between focus and background originates with how the speaker intends an utterance to tie into the context and what the speaker

[5]See, for example, Van der Sandt & Geurts (1991) for a more detailed account of the accommodation phenomenon.

believes about the hearer's knowledge and expectations. The distinction describes something about how the information in the proposition is presented: **as if the hearer already knows the background (or, that s/he will be willing to take it for granted)** [emphasis is ours]. (p.3)

Workers in the Prague School are more explicit about their intention to differentiate between backgroundedness, on the one hand, and oldness or givenness, on the other. Firbas (1964), for instance, argues that the non-focal part of the sentence "need not necessarily convey known information or such as can be gathered from the verbal and situational context".[6] As an example of new but backgrounded information, consider the italicised part of the response sentence in (247) (adopted from Daneš 1974):

(247) What did Wöhler find when he heated some ammonium cyanate?
He found [$_F$ that it was thereby converted into urea], *previously known only as a product of living organisms.*

In the given context, it is the bracketed part of the sentence that encodes the focus of the utterance, as it is that part that provides the answer to the question. Just to double-check that this is the case, notice that in a coherent discourse it is the bracketed bit, but not the italicised one, that will be negated by an immediately following objection like:

(248) No, that is not true.

According to Daneš (1974), the backgroundedness of the italicised component of the sentence in example (247) is overtly marked by the apposition process it undergoes. More precisely, he takes the sentence to be the result of the condensation or fusion of two separate sentences, such as:

(249) He found that it was thereby converted into urea. This substance had been previously known as a product of living organisms.

[6] As an alternative to the strict bipartition of the sentence into an information-bearing part and a non-information-bearing one, Firbas introduces the notion of communicative dynamism, by which he means "the extent to which the sentence element contributes to the further development of the communication" (1964, p.270). According to Firbas, all sentence elements are ranked in a **continuum** of communicative dynamism.

As the second sentence is communicatively less relevant than the first, it is "deprived of its utterance status, and thus backgrounded" (p. 116).

What is of interest for us is that the backgroundedness of the italicised part in (247) does not preclude it from encoding a new piece of information. On the contrary, it seems that by using it the speaker intends to increase the hearer's knowledge (i.e. intends to convey a new piece of information) so that the significance of Wöhler's discovery can be better appreciated.

Now, in view of the facts noted above, we can take the notions of presupposition and background to characterise just the same phenomenon, as long as we are concerned with the informational status of expressions. One of the reasons behind the presence of two distinct notions could be a methodological one. it seems to us that the notion of presupposition provides a more semantic point of view to the structuring of information, maybe for historical reasons. The notion of backgrounding (or focusing), on the other hand, is based on a more pragmatic perspective. It is probably for this reason that researchers working with the latter notion are more interested in the textual and communicative aspects of the phenomenon, such as the interaction between the background-focus articulation of the sentence and the speaker's assumptions about the hearer's knowledge-store (e.g. Vallduví 1990) or the interaction between that articulation and the cohesiveness or coherence of the text (or discourse) it occurs in (e.g. Daneš 1974).

### 4.1.2 Linguistic realisation

As Vallduví & Engdahl (1994) point out, there is a large degree of cross-linguistic diversity involved in the structural realisation of informational articulations such as the pragmatically motivated background-focus partition. An important axis along which languages are classified is that of whether they mostly use prosodic or syntactic means for this purpose. For instance, Catalan and English are considered to be two exemplars that tend to occupy the opposite ends of that spectrum. Vallduví (1993) argues that "in Catalan informational partitions are realized by syntactic means: focal elements remain within the core clause, while [back]ground elements are detached to a clause peripheral position" (p.15). Consider the following Catalan sentence:

(250) L'amo el$_i$ rebutjarà, el projecte$_i$.
the.boss obj 3s-fut-reject the project

'The boss will reject the project.'

Vallduví argues that Catalan is an underlyingly VOS language and that the detachment of an object from the core clause leaves behind a pronominal clitic.[7] From this point of view, the subject and object NPs in this example are left- and right-dislocated.[8] The verb is the only element that constitutes the focus of the sentence. This sentence will be felicitous, for instance, as an answer to (the Catalan equivalent of) the following question:

(251) What do you reckon the boss will think about the project?

In contrast to Catalan, English is argued to mainly rely on prosodic means to realise informational articulations, though it has also some syntactic means, such as cleft-constructions or apposition, at its disposal. In order to give a brief description of the prosodic realisation of the background-focus partition of English sentences, we first need to introduce some basic notions and terms relevant to that phenomenon in general:

The prosodic realisation of the informational structuring of the sentence is carried out by means of intonation contours. Broadly speaking, an intonation contour serves to delimit an informational unit. In Pierrehumbert's (1980) phonology of intonation, intonation contours are described in terms of pitch levels and tones. There are two phrasal tones (i.e. level functions of pitch against time): H and L, indicating respectively high and low 'simple' tones. There are also two boundary tones: H% and L%, denoting an intonational phrase-final rise or fall. Stress is another term that is frequently used in describing the informational structuring of sentences. Perceived stress is a combination of duration, amplitude and pitch (cf. Pierrehumbert 1980 and Pierrehumbert & Hirschberg 1990). Stressed high and low tones are marked with H* and L*.

It is a widespread view that in English focus is associated with the H* pitch accent tone, which is called an A accent in Jackendoff 1972. (252) shows how the focus of a sentence is associated with an A accent in its different background-focus articulations, where the A-accented item is written is small caps:

[7]According to Vallduví pronominal clitics do not participate in the informational articulation of the sentence in Catalan.

[8]Vallduví (1990, 1993) makes a distinction between left- and right-detached elements in a Catalan sentence: Though they are all background elements, a left-detached NP functions also as the topic (or, in Vallduví's terminology, the link) of the sentence. We will discuss topics in Chapter 6.

(252) a. What did Fido eat?

Fido eat [$_F$ the CAKE].

b. Who ate the cake?

[$_F$ FIDO] ate the cake.

c. What did Fido do to the cake?

Fido [$_F$ ATE] the cake.

One point that is noteworthy is that intonational prominence is not always capable of disambiguating a given English sentence in terms of focus assignment. For example, when taken in isolation, the declarative utterance in (252a) does not have to have reading with narrow focus on the object NP. In an appropriate context, this sentence can receive a different informational partition, as illustrated below.

(253) What did Fido do?

Fido [$_F$ ate the CAKE].

Another point which is of particular interest is that in English focus projection is only possible if the item that is given focal intonational prominence is the peripheral one, as in (253). The following example (from Vallduví & Engdahl (1994)) illustrates this fact:

(254) a. The butler [$_F$ offered the president some COFFEE].

b. *The butler [$_F$ offered the PRESIDENT some coffee].

## 4.2 The Focus-Background Analysis of Turkish Sentences

In developing our account of the structural realisation of focus and background in Turkish, we will make a distinction between *nominal foci* and *verbal foci*. By nominal focus we mean a focal constituent whose head is a noun and by verbal focus a focal constituent whose head is a verb. We will see that these two kinds of focal constituents display different, almost contrasting, behaviours with respect to the structuring of focus in Turkish.

### 4.2.1 The prosodic marking of nominal foci

In Turkish, a nominal constituent functioning as the focus of the utterance must receive the primary stress and highest pitch accent (which is an A-accent) in the sentence. If this prosodic prominence is given to a non-focal constituent the result becomes total unacceptability. The examples below illustrate these facts:

(255) KIM Kaya-ya vur-du?
who Kaya-dat hit-pst
'Who hit Kaya?'

a. OYA Kaya-ya vur-du.
Oya Kaya-dat hit-pst
'OYA hit Kaya.'

b. *Oya KAYA-YA vur-du.

c. *Oya Kaya-ya VUR-DU.

(256) Oya KIM-E vur-du?
Oya who-dat hit-pst
'Who did Oya hit?'

a. Oya KAYA-YA vur-du.
Oya Kaya-dat hit-pst
'Oya hit KAYA.'

b. *OYA Kaya-ya vur-du.

c. *Oya Kaya-ya VUR-DU.

In these examples, the (a) sentences have a felicitous prosodic structure, as the pitch accent accent falls on the focal constituent. The (b) sentences, on the other hand, are unacceptable, because a non-focal constituent receives the focal pitch accent.

If there is more than one constituent serving as a narrow focus, each constituent receives its own accent and stress:

(257) KIM KIM-E vur-du?
who who-dat hit-pst
'Who hit who?'

a. OYA KAYA-YA vur-du.
Oya Kaya-dat hit-pst
'OYA hit KAYA.'

b. *OYA Kaya-ya vur-du.

c. *Oya KAYA-YA vur-du.

One constraint on multiple-focus sentences is that a non-focal element cannot intervene between two focal ones. Sentences like the (b) ones in the following examples sound very odd in Turkish:

(258) a. Parti-de Kaya-ya [$_S$ KIM [$_{VP}$ NE at-tı]].
party-loc Kaya-dat who what throw-pst
'Who threw what at Kaya at the party?'

b. *Parti-de [$_S$ KIM [$_S$ Kaya-ya [$_{VP}$ NE at-tı]]].
party-loc who Kaya-dat what throw-pst

(259) a. Parti-de Kaya-ya [$_S$ OYA [$_{VP}$ bir BARDAK at-tı]].
party-loc Kaya-dat Oya one glass throw-pst
'OYA threw a GLASS at Kaya.'

b. *Parti-de [$_S$ OYA [$_S$ Kaya-ya [$_{VP}$ bir BARDAK at-tı]]].
party-loc Oya Kaya-dat one glass throw-pst

Note that in the examples above, the focal constituent contains only a single word. Hence, a question might come to mind as to where the focal accent falls if the focus contains several words. In such a case the accent is placed on the head of the nominal, which is the rightmost word. Consider the example below:

(260) Oya NE ye-di?
Oya what eat-pst
'What did Oya eat?'

a. Oya [$_F$ kırmızı bir ELMA] ye-di.
Oya red one apple eat-pst
'Oya ate a red apple.'

b. *Oya [$_F$ kırmızı BIR elma] ye-di.
Oya red one apple eat-pst

c. *Oya [$_F$ KIRMIZI bir elma] ye-di.
Oya red one apple eat-pst

There is another point that is worth mentioning about the examples above. It should have been noted that in the Turkish questions it is the question word (or words) that receives the primary stress and accent. As we will illustrate with many more examples in what follows, this is a general fact about Turkish questions. We share

the common assumption that the focus of a question is its questioned constituent. The noted fact about the prosodic structure of Turkish questions strongly suggests that this is a sound assumption.

### 4.2.2 Syntax of focal and backgrounded nominals: precedence relations

In the examples in the preceding subsection, in order to eliminate any effect on the interpretation due to word order variation, we have considered the sentences in their basic (i.e. SOV) word order. A common assumption is that word order variation (i.e. deviation from the SOV order) strongly correlates with the marking of focus in Turkish. Two positions have been assigned a special role in the background-focus articulation of Turkish sentences. The **immediately preverbal** and **postverbal** positions have been argued to have focusing and backgrounding functions respectively. We will first offer some observations on the correlation between the immediately preverbal position and focusing. After that, we will look at the backgrounding function of the postverbal position.

**The immediately preverbal position**

Many linguists consider the immediately preverbal slot to be the (default) focus position in Turkish. Below are two typical examples of this view:

> The position immediately preceding the verb is the focus position in Turkish; thus, in any marked order, the NP just before the verb is the one put into focus. (Erguvanlı 1984:34)

> ... in neutral intonation, the immediately preverbal position is the default focus position associated with emphasis or contrast. (Kural 1992:2)

However, such statements do not seem to be tenable under a close examination of Turkish data. At worst they make wrong predictions about the background-focus articulation of some sentences and at best they are misleading about the general phrase structure of Turkish sentences. Let us see some examples that seem to be unpredictable for the views expressed in the quotes above. Firstly, take Erguvanlı's claim that "in any marked order, the NP just before the verb is the one put into focus". The unmarked word order in Turkish is SOV. Therefore, the prediction

that follows from Erguvanlı's claim is that the subject of an OSV-ordered Turkish sentence must function as the focus. But, as the following example shows, this is not always the case:

(261) a. KIM-I bir köpek ısır-dı.
who-acc one dog bite-pst
'Who did a dog bite?'

b. [$_F$ KAYA-YI] bir köpek ısır-dı.
Kaya-acc one dog bite-pst
'A dog bit [$_F$ KAYA].

The elements of sentence (261b) are not arranged in accordance with the unmarked SOV order. Nonetheless, when this sentence is uttered as an answer to the question in (261a), the object NP, which is not immediately preverbal, functions as the totally felicitous focus of the utterance.

Secondly, take Kural's claim that the immediately preverbal position is the default focus position (associated with emphasis or contrast) in neutral intonation. Though he does not make it clear, Kural seems to mean the most natural interpretation by "neutral intonation". This claim, too, seems to be dubious in the light of examples like the following:

(262) Oya oda-sı-nda NE yap-ıyor.
Oya room-poss-loc what do-prog
'What is Oya doing in her room?'

a. [$_F$ Bir ANI-SI-NI arkadaş-ı-na anlat-ıyor].
one memory-poss3-acc friend-poss3-dat tell-prog
'She [$_F$ is telling her friend one of her MEMORIES].

b. *Bir anı-sı-nı ARKADAŞ-I-NA anlat-ıyor.

The (a) and (b) sentences above are assumed to be uttered as a reply to the given question. In the (a) sentence, the focal accent falls on a constituent that does not occupy the immediately preverbal position and it is the whole sentence except the subject that is put into focus. Besides, while the (a) sentence receives a very natural intonation, the intonation assigned to the (b) sentence, where the focal accent is placed on the immediately preverbal constituent, sounds very odd. It is also worth noting that when these sentences are taken in isolation, it is the (a) intonation that

will be considered as neutral or unmarked (at least, as long as the criterion is that of yielding the most natural interpretation).

Thirdly, there are some cases where it is not possible to put the focused constituent in the immediately preverbal position in any possible arrangement of the sentence elements. These are the cases where the sentence element occupying the immediately preverbal position cannot be moved away from there, irrespective of whether it is focal or not. Consider the example below.

(263) Bahçe-de KIM bir köpek gör-dü.
garden-loc who one dog see-pst
'Who saw a dog in the garden?'

a. Bahçe-de $[_F$ OYA] bir köpek gör-dü.
garden-loc Oya one dog see-pst
'OYA saw a dog in the garden.'

b. *Bahçe-de bir köpek OYA gör-dü.

c. *Bir köpek bahçe-de OYA gör-dü.

d. *Bahçe-de OYA gör-dü bir köpek.

As should be recalled from Section 3.4.2, in Turkish a DO not carrying case morphology (and not followed by a particle like *dA* 'also') has to occur in the immediately preverbal position in order to receive structural case from the verb. In this example, *bir köpek* 'a dog' is such a DO and, hence, necessarily intervenes between the verb and the focal NP *Oya*. For this reason, the (b), (c) and (d) sentences above will be unacceptable in any possible discourse context.

Finally, assigning the immediately preverbal position a focus marking role might lead one to think that Turkish phrase structure allows only one constituent to be focused at a time. As examples like (257) show, this is not the case in Turkish. Two separate constituents can be felicitously marked as focal.

Relying on such observations, we argue that Turkish does not have a particular structural position allocated for the special purpose of marking the focus. Now, a question arises as to what leads researchers to claim that the immediately preverbal position is the default focus position in Turkish. The answer is quite obvious. There is a statistical correlation between that position and the focus in Turkish sentences. In most cases, the focus occupies the slot just before the verb. However, this does not necessarily mean that the focal constituent moves to a specific syntactic position.

On the contrary, we argue that in Turkish focusing itself can never be a reason for the displacement of a constituent. The frequent occurrence of foci in the immediately preverbal position[9] is, we claim, the result of the displacement of other constituents for two other reasons: *backgrounding* and *topicalization.* The strong tendency which non-focal constituents (excepting the verb) display to leave their position within the 'core' clause for either of these reasons mostly leads to an arrangement of sentence elements where no constituent remains between the focal constituent and the verb. As this tendency does not or cannot always result in the actual displacement of a non-focal constituent, we may have cases where the focus is not immediately preverbal, as exemplified above. Below, we will have a look at the displacement of sentence elements for backgrounding. Topicalization will be discussed in the next chapter.

**The postverbal position**

Erguvanlı (1984) identifies three restrictions on an element that may occur after the verb in a Turkish sentence:

1. it cannot be stressed;
2. it cannot be a questioned constituent (in a question);
3. it cannot be an indefinite NP.

We agree with Erguvanlı about the first two restrictions. In principle, any preverbal constituent and the verb itself can be stressed or questioned in a Turkish sentence. However, neither of these properties can be borne by a postverbal constituent:

(264) a. *Kaya-ya vur-du OYA.
Kaya-dat hit-pst Oya

b. *Oya vur-du KAYA-YA.
Oya hit-pst Kaya-dat

(265) a. *Kaya-ya vur-du KIM?
Kaya-dat hit-pst who

b. *Oya vur-du KIM-E?
Oya hit-pst who-dat

[9]We should note that in labelling a position as 'the immediately preverbal one' here, we take into account only the mere linear arrangement of sentence elements, ignoring the other aspects of their structural relations.

But, it does not seem to be the case that a postverbal constituent must necessarily be definite in Turkish:

(266) Oya NEREDE?
Oya where
'Where is Oya?'

Oya SINEMA-YA git-ti bir arkadaş-ı-yla.
Oya cinema-dat go-pst one friend-poss3-com

'Oya has gone to a movie with a friend of hers.'

(267) Adam NEDEN yürü-ye-mi-yor?
man why walk-abil-neg-prog
'Why is the man not able to walk?'

Çünkü bir BACAĞ-I-NI kaybet-miş bir savaş-ta.
because one leg-poss3-acc lose-pst one war-loc

'Because he lost a leg in a war.'

The affirmative sentences are entirely felicitous in their respective contexts, although they both have an indefinite constituent occurring postverbally.

The inability of a postverbal constituent to receive stress is the direct result of the informational function of the postverbal position. In Turkish, only backgrounded elements can occur postverbally. A focal constituent, whether it is stressed or not, can never appear in a postverbal slot. (268) exemplifies this fact:

(268) KIM Kaya-ya vur-du?
who Kaya-dat hit-pst
'Who hit Kaya?'

a. [$_F$ OYA] Kaya-ya vur-du.
Oya Kaya-dat hit-pst
'[$_F$ OYA] hit Kaya.'

b. *Kaya-ya vur-du [$_F$ OYA].

c. *Kaya-ya vur-du [$_F$ Oya].

As stress is a sign of focal prominence, it cannot be placed on a postverbal constituent, which is syntactically marked as non-focal. To be more specific, sentences

like (264a) and (264b) are ruled out because of the conflict between the prosodic and syntactic markings of their postverbal elements.

It is exactly the same conflict that makes the postverbal appearance of a questioned constituent impossible. As we remarked in Section 4.2.1, such constituents are focal by nature. Hence, they are categorically excluded from the postverbal position, where only backgrounded elements can appear.

Recall that one of the properties we ascribed to the background of an utterance is that it need not necessarily convey known information (cf. Section 4.1.1). The fact that a postverbal constituent does not have to be definite in Turkish is just a manifestation of that property of the background of utterances. The pieces of information conveyed by the postverbal indefinites in examples (266) and (267) bear almost no relevance to what the queriers want to learn. This is a sufficient condition for the indefinites to felicitously appear in the postverbal positions. This is the case even if the information they encode is entirely new for the queriers.

Before concluding this section, we would like to make two more remarks about the backgrounding function of the postverbal position in Turkish sentences.

First, an element occurring postverbally is obliged to receive a backgrounded interpretation, but a background element does not have to appear postverbally. Take, for instance, the NP Kaya-ya in (268a). This NP is part of the background of the sentence (in the given context). Nonetheless, it felicitously stays *in situ*. It is worth noting that there is no grammatical constraint that could prevent it from moving to the postverbal position. The utterance below could be a totally fine response to the question in (268):

(269) [$_F$ OYA] vur-du Kaya-ya.
Oya hit-pst Kaya-dat
'[$_F$ OYA] hit Kaya.'

Likewise, the backgrounded indefinites in (266) and (267) could occur preverbally in exactly the same contexts. The utterances below are alternative felicitous responses, respectively, to the questions provided in these examples:

(270) Oya bir arkadaş-ı-yla [$_F$ SINEMA-YA git-ti].
Oya one friend-poss3-com cinema-dat go-pst
'Oya has gone to a movie with a friend of hers.'

(271) Çünkü bir savaş-ta [$_F$ BIR BACAĞ-I-NI kaybet-miş].
because one war-loc one leg-poss3-acc lose-pst

'Because he lost a leg in a war.'

Second, as an expected manifestation of its backgrounding feature, the postverbal position always remains outside the scope of a negation operator. Consider (272).

(272) Oya [$_F$ SINEMA-YA git-me-di] arkadaş-ı-yla.
Oya cinema-dat go-neg-pst friend-poss3-com
'Oya didn't go to a movie with her friend.'

An utterance of this sentence will induce the presupposition that Oya did something with her friend. What is denied will be that what they did was go to a movie. For example, a very natural continuation to (272) could be (273):

(273) Onunla [$_F$ BASKETBOL oyna-dı].
with.him/her basketball play-pst
'She played basketball with him/her.'

### 4.2.3 A more configurational account of the syntax of backgrounding

In this subsection, we will attempt to refine the observations made on the syntax of backgrounding above into a phrase structural account. Our general claim is this:

(274) In Turkish, backgrounded elements strongly tend to be left- or right-detached to a 'clause-external' position.

#### 4.2.3.1 Banfield's (1982) notion of E(xpression)

We will exploit Banfield's (1982) notion of *expression* in defining what is 'clause-internal' and what is 'clause-external' in Turkish. Banfield's primary motivation to introduce this notion is a desire to give a syntactic account of the interaction between *direct* and *indirect speech*, which can capture both their similarities and their differences. She starts her analysis by pointing out the following peculiarities of direct and indirect speech, which are identified as major differences between the two types of speech by traditional grammar:

> (i) a subordinating conjunction (*that* or *whether* and *if* in English, *que* or *si* in French) introduces indirect speech; (ii) the verb of indirect speech

> is subject to concordance of tense rules which affect verbs in many types of subordinate clauses; (iii) the grammatical person of pronouns with the same referent in the main and embedded clauses must be identical in indirect speech alone – i.e. there is a concordance of person as well as tense; and (iv) demonstrative elements referring to the time or place of the speech act must also show 'concordance' in indirect speech but not direct speech. (Banfield 1982:25)

The example in (275) (from Banfield 1982) illustrates these differences. (275a) and (275b) contain, respectively, direct and indirect speech:

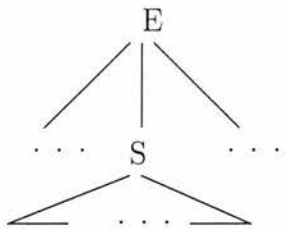
(275) a. Mary told me yesterday at the station, *'I will meet you here tomorrow.'*

b. Mary told me yesterday at the station that *she would me there today.*

Working within a *transformational* framework of syntax, Banfield first raises the question of whether we can predict these differences between direct and indirect speech by deriving one from the other by means of a plausible *transformation.*[10] Then, she points out some further peculiarities of the two types of speech which, she argues, definitely make it impossible to relate a sentence of direct speech and a sentence of indirect speech by means of a *transformational* derivation. Banfield argues that the difference between direct and indirect speech is not the result of a deviation process but of a categorial nature. Some important tenets of the theory she puts forward can be stated, roughly, as follows:

1. All independent utterances are rooted by an E(xpression) node.
2. Ignoring some theory-internal details (such as the postulation of a separate projection for inflection markings or complementisers), the syntactic structure of a sentence is of the following form:

[10] *Transformation* is a notion that belongs to generative grammars developed within a Chomskyan framework. In this framework, a division is made between two kinds of rules or formal operations: *base rules* and *transformations.* Base rules are phrase structure rules and together with rules of lexical insertion constitute the *base component.* The base component generates *deep structures.* The *transformational component*, which consists of rules of transformation, takes a deep structure as input and transforms it to an *S-structure*, which is akin to the surface structure of an expression. The actual surface form of the expression is obtained in two steps: First, *stylistic rules* are applied to the *S-structure* to generate the *phonetic form.* Then, the *phonological component* takes the *phonetic form* as input and yields the surface phonetic representation.




3. The reported sentence of direct speech retains its status of being an independent utterance. Thus, it is rooted by an E node. The reported sentence of indirect speech, on the other hand, loses its independent status by being subordinated to the matrix sentence. Therefore, it is not rooted by an E node but an S node.

Although we will not work within a transformational framework, we will adopt Banfield's notion of E(xpression). We will not go into the details of the line of reasoning which Banfield pursues in order to motivate an E-labelled node. But, in order to find out the distinguishing properties of the projection of E and that of S, we will sometimes refer to the differences which she detects between direct and indirect speech. We will see that making a distinction between an E node and an S node dominated by it, with the peculiarities ascribed to this distinction by Banfield, will allow us to give a plausible account of the syntactic realisation of the informational articulations of Turkish sentences. Let us see how we can give an account of the syntax of backgrounding in Turkish with the aid of the E-node/S-node distinction.

#### 4.2.3.2 Post-verbal elements occur S-externally under an E node

We will examine backgrounded elements that occur postverbally and those that occur preverbally separately. Let us start with the former.

Banfield notes that in English, right dislocation, which moves a constituent to the end of the S, is excluded from indirect speech, as shown in the following examples:

(276) a. She replied, 'We may be parted for years, I and Peter.'

b. *She replied that they might be parted for years, she and Peter.[11]

(277) a. She exclaimed, 'How awful they are, women!'

b. *She exclaimed that they were awful, women.

(278) a. 'It was so with her – my wife', Mr Ramsay remarked.

[11]This utterance could be acceptable in a colloquial context.

b. *Mr Ramsay remarked that it had been so with her – his wife.

This means that in English right dislocated constituents are restricted to an S-external position under E. Exactly the same constraint applies to postverbal constituents in Turkish. Turkish has two verbs that can be translated into English as 'to say': *söyle-mek* and *de-mek*. Interestingly, the former is used in indirect speech, whereas the latter is used in direct speech. In other words, *söyle-mek* subcategorises for an S, while *de-mek* subcategorises for an E. The following examples show that the sentential argument of the verb *söyle-mek* cannot have a postverbal constituent, but that of the verb *de-mek* can:

(279) a. Ali Oya-nın Kaya-ya vur-duğ-u-nu söylü-yor.
Ali Oya-gen3 Kaya-dat hit-ger-poss3-acc say-prog
'Ali says that Oya hit Kaya.'

b. *Ali Oya-nın $e_i$ vur-duğ-u-nu Kaya-ya$_i$ söylü-yor.

c. Ali 'Oya $e_i$ vur-du Kaya-ya$_i$' di-yor.
Ali Oya hit-pst Kaya-dat say-prog
'Ali says, 'Oya hit Kaya' '.

(280) a. Ali Oya-nın bir arkadaş-ı-yla sinema-ya git-tiğ-i-ni
Ali Oya-gen3 one friend-poss3-com cinema-dat go-ger-poss3-acc
söylü-yor.
say-prog
'Ali says that Oya has gone to a movie with a friend of hers.'

b. *Ali Oya-nın $e_i$ sinema-ya git-tiğ-i-ni bir arkadaş-ı-yla$_i$ söylü-yor.

c. Ali 'Oya $e_i$ sinema-ya git-ti bir arkadaş-ı-yla$_i$' di-yor.
Ali Oya cinema-dat go-pst one friend-poss3-com say-prog
'Ali says, 'Oya has gone to a movie with a friend of hers' '.

We argue that in Turkish all postverbal constituents occur in a position that is immediately dominated by the E. That is, we claim that the verb marks the rightmost boundary of the S. The problem with the (b) sentences in the examples above is that the embedded clauses of these sentences are rooted by S nodes. For this reason, in contrast to the reported sentences in the (c) cases, these clauses do not have landing sites for their right dislocated constituents. We should stress that what makes these sentences unacceptable is not the dislocation of a constituent of the embedded clauses. As shown in (281), a constituent of the embedded clause can be felicitously dislocated to a postverbal slot of the matrix clause, which is an E-dominated clause-external position:

(281) Ali Oya-nın $e_i$ vur-duğ-u-nu söylü-yor Kaya-$ya_i$.
Ali Oya-gen3 hit-ger-poss3-acc say-prog Kaya-dat
'Ali says that Oya hit Kaya.'

#### 4.2.3.3 The syntactic position of background elements that occur preverbally

We will now consider the case in Turkish where background elements appear before the verb. We will attempt to decide whether such elements occur S-externally under the E or within the S. This question cannot be given a straightforward answer. This is because Turkish lacks a boundary marker for the leftmost position of the S. In view of the fact that an element of an embedded clause seems to be able to move beyond the boundaries of that clause (cf. example (281)), the structure for (280a), for instance, may be, at least in principle, any of those listed below:[12]

(282) a. [$_E$ Ali [$_S$ Oya-nın bir arkadaş-ı-yla sinema-ya git-tiğ-i-ni] söylü-yor].

b. [$_E$ Ali Oya-$nın_i$ [$_S$ $e_i$ bir arkadaş-ı-yla sinema-ya git-tiğ-i-ni] söylü-yor].

c. [$_E$ Ali Oya-$nın_i$ bir arkadaş-ı-$yla_j$ [$_S$ $e_i$ $e_j$ sinema-ya git-tiğ-i-ni] söylü-yor].

d. [$_E$ Ali Oya-$nın_i$ bir arkadaş-ı-$yla_j$ sinema-$ya_k$ [$_S$ $e_i$ $e_j$ $e_k$ git-tiğ-i-ni] söylü-yor].

Thus, we need a linguistic argumentation to specify the exact position of preverbal background elements. Let us start with one of Banfield's observations about the difference between direct and indirect speech.

We have already seen that right dislocated constructions cannot appear in indirect speech. Banfield observes that among the constructions that can appear only in direct speech (but not in indirect speech) are also addressee-oriented adverbials, such as *between you and me, frankly, confidentially, candidly, to be honest* and *if you ask me.* She gives the following example to illustrate this fact:

(283) a. John said, 'Between you and me, she is lying'.

b. John said that {*between him and her / *frankly} she was lying'.

[12] As we do not have any evidence indicating to the contrary, we assume that in Turkish sentences the verb never leaves its original position within the clause.

The conclusion that follows from this observation is that addressee-oriented adverbials cannot occur under the S (i.e. they are restricted to an S-external position under the E). Assuming that the same constraint also applies to their Turkish counterparts, we can use such adverbials to detect the syntactic position of a constituent in Turkish. The idea we will exploit is that any constituent that appears to the left of an addressee-oriented adverbial must occupy an S-external slot directly dominated by the E node. Consider the examples below:

(284) Oya NEREDE?
Oya where
'Where is Oya?'

a. Laf aramızda, Oya bir arkadaş-ı-yla [$_F$ SINEMA-YA git-ti].
word between.you.and.me Oya one friend-poss3-com cinema-dat go-pst
'Between you and me, Oya has gone to a MOVIE with a friend of hers.'

b. Oya, laf aramızda, bir arkadaş-ı-yla [$_F$ SINEMA-YA git-ti].

c. Oya bir arkadaş-ı-yla, laf aramızda, [$_F$ SINEMA-YA git-ti].

d. *Oya bir arkadaş-ı-yla [$_F$ SINEMA-YA, laf aramızda, git-ti].

(285) Oya-nın KIM-E vur-duğ-u-nu merak ed-iyor-um.
Oya-gen3 who-dat hit-ger-poss3-acc wonder-prog-1sg
'I wonder who Oya hit.'

a. Ban-a sor-ar-sa-n, Oya [$_F$ KAYA-YA] vur-du.
I-dat ask-aor-cond-2sg Oya Kaya-dat hit-pst
'If you ask me, Oya hit KAYA'.

b. Oya, ban-a sor-ar-sa-n, [$_F$ KAYA-YA] vur-du.

c. *Oya [$_F$ KAYA-YA], ban-a sor-ar-sa-n, vur-du.

*Laf aramızda* and *bana sorarsan* are the Turkish equivalents of the English adverbials 'between you and me' and 'if you ask me', respectively. There are two inferences that can be plausibly drawn from the examples above: In Turkish,

1. focal constituents cannot escape to an S-external position;

2. background elements preceding the focus occur S-externally under the E.

In fact, the first inference can be thought of as a paraphrase of an assumption already put forward: in Turkish focal constituents are restricted to the 'core' clause (cf. Section 4.2.2). We equate the core of a sentence with the S. Examples (286) and (287) show that the dative constituents *sinema-ya* 'cinema-dat' and *Kaya-ya* 'Kaya-dat' are not inherently restricted to S-internal positions. Their exclusion from an S-external position in the examples above is only because of their focal status.

(286) Oya sinema-ya KIM-LE git-ti?
Oya cinema-dat who-com go-pst
'Who did Oya go to a movie with?'

a. Oya sinema-ya, laf aramızda, [$_F$ bir ARKADAŞ-I-YLA]
Oya cinema-dat word between.you.and.me one friend-poss3-com
git-ti.
go-pst
'Between you and me, Oya has gone to a MOVIE with [$_F$ a friend of hers]'.

b. *Oya sinema-ya [$_F$ bir ARKADAŞ-I-YLA], laf aramızda, git-ti.

(287) Oya-nın Kaya-ya NE yap-tığ-ı-nı merak ed-iyor-um.
Oya-gen3 Kaya-dat what do-ger-poss3-acc wonder-prog-1sg
'I wonder what Oya did to Kaya'.

Oya Kaya-ya, ban-a sor-ar-sa-n, [$_F$ VUR-DU].
Oya Kaya-dat I-dat ask-aor-cond-2sg hit-pst

'If you ask me, Oya [$_F$ HIT] kaya.'

Admittedly, our second inference (namely that background elements preceding the focus occur S-externally) seems a little dubious in the light of the examples in (284) and (285), where some background elements appear between the adverbial and the focal constituent. The position of an addressee-oriented adverbial serves only to indicate that the element falling to its left are S-external but it does not say anything about those falling to its right. So, only by exploiting the assumption that an addressee-oriented adverbial must be an immediate daughter of an E-labelled node, we cannot directly jump to the conclusion that the background elements in (284a), (284b) and (285a) occur outside the boundaries of their Ss. Does this mean that we should weaken the second inference? Should we say that in Turkish background elements preceding the focus are able to but do not have to appear S-externally? We argue that this is not a necessary step to take. On the contrary, we

claim that the free movement of the adverbial among the background elements in the examples above is another indication of these elements' S-external appearance. It is a simple manifestation of the fact that the E projection has a very flexible structure, at least, compared to the structure of S. Let us briefly explain what we mean by this.

The E projection hypothesised by Banfield does not conform to the usual linguistic assumptions. For instance, there is no element that may head such a projection. That is, there is no $E^0$. King (1993), approaching the problem from the point of view of Government-Binding Theory,[13] characterises E as an anomalous projection: "the E projection does not conform to the usual $\bar{X}$ schema: there is no head, no specifier" (p. 99).

S and E differ also in terms of the structural arrangement of their constituents. S has a configurational structure. Its constituents are organised in accordance with some dominance and precedence rules. All S-external constituents, on the other hand, are organised in a flat structure and not restricted to any particular word order. In Turkish, the part of the sentence that includes background elements that appear on the left of the focal constituent and on the right of the verb displays highly non-configurational characteristics, while the part of the sentence that starts with the focus and ends with the verb has a fairly rigid structure. That is, the former part conforms to the structure of E and the latter to that of S. Let us first observe the linear arrangement of constituents in the indicated portions of the sentence. Consider (288).

(288) Fido Oya-ya NE yap-tı?
Fido Oya-dat what do-pst
'What did Fido do to Oya?'

a. Fido Oya-yı [$_F$ ISIR-DI].
Fido Oya-acc bite-pst
'Fido [$_F$ BIT] Oya.'

b. Oya-yı Fido [$_F$ ISIR-DI].

c. Fido [$_F$ ISIR-DI] Oya-yı.

d. Oya-yı [$_F$ ISIR-DI] Fido.

e. [$_F$ ISIR-DI] Fido Oya-yı.

[13]Government-Binding Theory is a syntactic theory developed within the transformational framework. See Chomsky (1981) for an initial version of this theory.

f. [$_F$ ISIR-DI] Oya-yı Fido.

All the permutations of the response sentence are equally fine in the given context. There is no restriction on the ordering of the background elements. Let us now embed the same sentence in a context where it will receive an all-focus interpretation:

(289) Parti-de ilginç birşey OL-DU mu?
party-loc interesting anything happen-pst Q
'Did anything interesting happen at the party?'

a. [$_F$ Fido OYA-YI ısır-dı].
Fido Oya-acc bite-pst
'[$_F$ Fido bit OYA.'

b. *[$_F$ Oya-yı Fido ısır-dı].

c. *[$_F$ Fido ısır-dı Oya-yı].

d. *[$_F$ Oya-yı ısır-dı Fido].

e. *[$_F$ Isır-dı Fido Oya-yı].

f. *[$_F$ Isır-dı Oya-yı Fido].

In the context above, all the permutations except the first one sound, at best, very odd. This suggests that there is a word order restriction on the constituents that appear within the focus. Even though the oddity of the last four permutations might be attributed to the postverbal occurrence of a focal element, it seems that the unacceptability of (289b) can be accounted for only in terms of a deviation from a certain word order, which is SOV in the given example.

The background and focus of a Turkish sentence display contrasting behaviours also in terms of dominance relations. Consider the example below.

(290) Kaya parti-de NE yap-tı?
Kaya party-loc what do-pst
'What did Kaya do at the party?'

a. [$_F$ KONUK-LAR-I$_i$ birbirleri-ne$_i$ tanıt-tı].
guest-pl-acc each.other-dat introduce-pst
'He introduced the guests$_i$ to each other$_i$'.

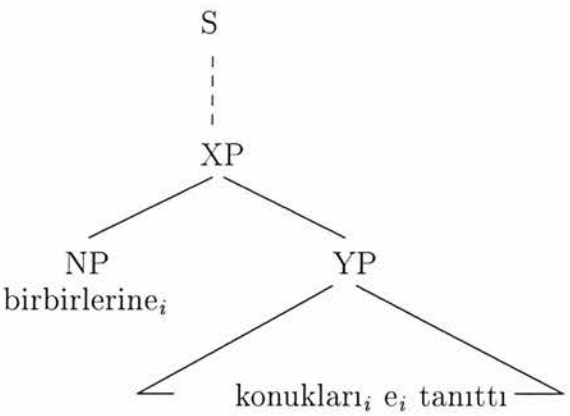
b. *[$_F$ Birbirleri-ne$_i$ KONUK-LAR-I$_i$ tanıt-tı].

While the sentence in (290a) is perfectly fine, the one in (290b) is unacceptable in the same context. One might be tempted to attribute the contrast in acceptability between the two sentences to the difference between their word orders. In the next subsection, we will argue that the unmarked word order for such sentences is Subject-Direct Object-Indirect Object-Verb. Therefore, the unacceptability of the (b) sentence might be argued to be the result of the marked ordering of its constituents. However, such an account would fail to predict the acceptability of an utterance like (291) in exactly the same context (i.e. as an answer to the question in (290)):

(291) [$_F$ Her yeni gel-en konuğ-a daha önce gel-miş
every newly arrive-part guest-dat further before arrive-pst
OL-AN-LAR-I tanıt-tı].
be-part-3pl-acc introduce-pst
'He introduced those who had arrived earlier to every newly arriving guest'.

The problem with (290b) seems to arise from the structural relation between the anaphoric NP and its antecedent. From the unmarked word order proposed for this sentence (i.e S-DO-IO-V) it follows that the anaphoric NP is dislocated to a syntactic position that stands in the following relation to its antecedent:

(292)




This structural relation can be described in terms of the syntactic notion of *c-command*, which is a configurational relation between two constituents:

(293) A node $A$ *c-commands* a node $B$ iff $A$ does not dominate $B$ (i.e. the constituent labelled by $B$ is not a constituent of the one labelled by $A$) and the first branching node dominating $A$ also dominates $B$.

Thus, in (290b) the anaphor c-commands its antecedent but not vice versa. However, it is usually argued that this is a strictly non-legitimate structural relation between an anaphor and its antecedent (cf. Government-Binding Theory). Postulating a configurational structure for S and assuming that the focus of a Turkish sentence is confined to the boundaries of that projection seem to provide a way to give a plausible account of examples like this.

The discussion above suggests that the focus of a Turkish sentence is imposed a fairly rigid structure also in terms of dominance relations among the constituents. Interestingly, in Turkish background elements that occupy peripheral positions behave again in the opposite manner. That is, they do not seem to require any particular hierarchical organisation among themselves. This fact shows up in the arbitrary placement of an anaphor and its antecedent in peripheral slots, when they are part of the background:

(294) Parti-de konuk-lar-i$_i$ birbirleri-ne$_i$ KIM tanıt-tı?
party-loc guest-pl-acc each.other-dat who introduce-pst
'Who introduced the guests$_i$ to each other$_i$ at the party?'

a. Parti-de konuk-lar-i$_i$ birbirleri-ne$_i$ [$_F$ KAYA] tanıt-tı.
party-loc guest-pl-acc each.other-dat Kaya introduce-pst
'[$_F$ KAYA] introduced the guests$_i$ to each other$_i$ at the party'.

b. Parti-de birbirleri-ne$_i$ konuk-lar-i$_i$ [$_F$ KAYA] tanıt-tı.

c. Parti-de konuk-lar-i$_i$ [$_F$ KAYA] tanıt-tı birbirleri-ne$_i$.

d. Parti-de birbirleri-ne$_i$ [$_F$ KAYA] tanıt-tı konuk-lar-i$_i$.

e. Parti-de [$_F$ KAYA] tanıt-tı konuk-lar-i$_i$ birbirleri-ne$_i$.

f. Parti-de [$_F$ KAYA] tanıt-tı birbirleri-ne$_i$ konuk-lar-i$_i$.

1

(295) Kaya$_i$ kendi-si$_i$ hakkında NE düşün-üyor?
Kaya self-poss3 about what think-prog
'What does Kaya$_i$ think about himself$_i$'.

a. Kaya$_i$ kendi-ni$_i$ [$_F$ ÇOK beğen-iyor].
Kaya self-acc very/much be.pleased.with
'Kaya$_i$ is [$_F$ VERY pleased] with himself$_i$'.

b. Kendi-ni$_i$ Kaya$_i$ [$_F$ ÇOK beğen-iyor].

c. Kaya$_i$ [$_F$ ÇOK beğen-iyor] kendi-ni$_i$.

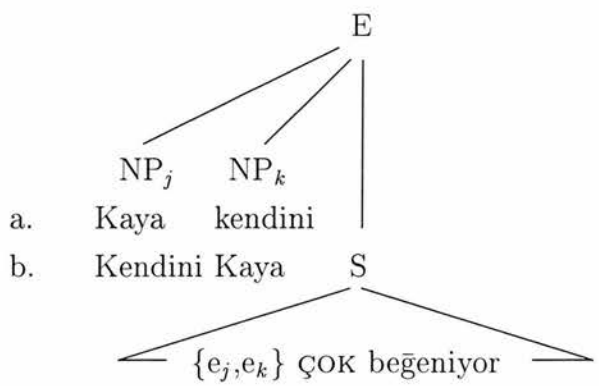
d. Kendi-ni$_i$ [$_F$ ÇOK beğen-iyor] Kaya$_i$.

e. [$_F$ ÇOK beğen-iyor] Kaya$_i$ kendi-ni$_i$.

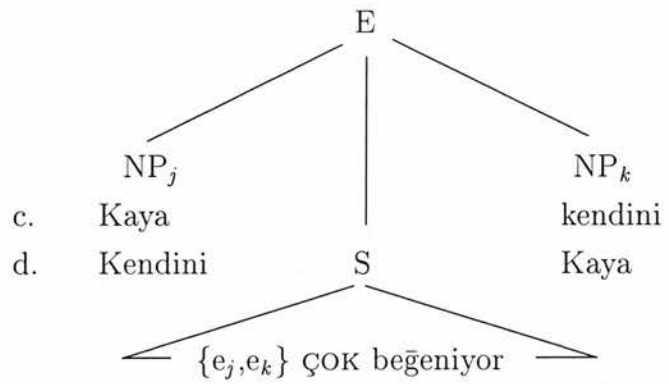
f. [$_F$ ÇOK beğen-iyor] kendi-ni$_i$Kaya$_i$.

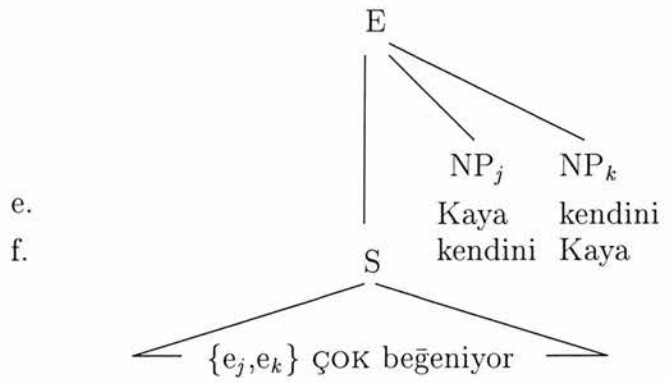
Each of the (a)-(f) sentences in the examples above can be a felicitous answer to the related question, even though some may be preferred to the others due to some factors such as *priming effect.*[14] A plausible account of such examples could be given again by referring to the notion of c-command. It could be argued that all the utterances in these examples are acceptable because in each case the anaphor and its antecedent are organised in a flat structure such that they can c-command each other. C-commanding each other is mostly considered to be an appropriate structural relation between an anaphor and its antecedent. Besides, this would be entirely compatible with our claim that in Turkish background elements that appear at the peripheries of the sentence are directly dominated by the E, which is a non-embeddable top-level node (except for coordination). For instance, in all the structures we propose to assign to sentences (295a)-(295d), the anaphor and the antecedent, which are the background elements, will be able to c-command each other:

(296)




[14] *Priming* refers to the phenomenon whereby the processing of an expression affects the subsequent processing of another expression in a way that they will share some features. In (294) and (295), the (a) sentences are the most preferred ones. This is probably because their constituents are arranged in the same order as those of the questions which they are supposed to be answering. That is, it is likely that this preference stems from a syntactic priming effect created by the preceding utterance of the questions.



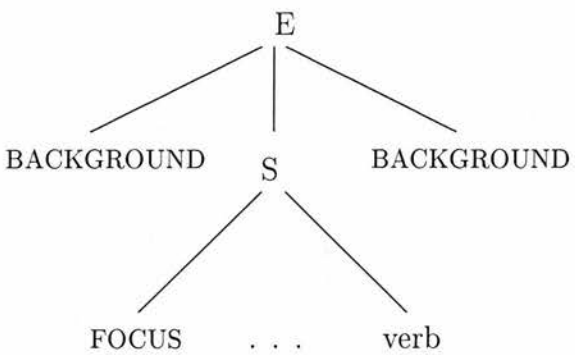

Or, alternatively, one could argue that when an anaphor and its antecedent are backgrounded, they do not enter the relation that would normally impose on them a certain hierarchical configuration (which would be formulated in terms of c-command relation). On either view, it will be reasonable to assume that in Turkish peripheral background elements occur as immediate daughters of the root node E.

To sum up, we have observed that in Turkish:

1. background constituents may precede addressee-oriented adverbials but focal ones cannot and
2. backgrounded constituents display highly flexible and non-configurational behaviours but focal constituents are organised in a fairly rigid and configurational structure.

Now, resting on the assumptions that addressee-oriented adverbials appear S-externally in Turkish (as they do in English) and that the E projection is flexible and non-configurational except the structure of its S daughter, we propose (297) as the general form of the syntactic realisation of the background-focus articulation of Turkish sentences:

(297)




It is worth stressing that not all constituents that occur under the S are focal. We have already seen that it is possible to have backgrounded constituents that occupy a position between the focus and the verb (e.g. example (268)). According to (297), such constituents must be S-internal. The examples below provide further support for this claim:

(298) KIM-IN Kaya-ya vur-duḡ-u-nu merak ed-iyor-um.
who-gen3 Kaya-dat hit-ger-poss3-acc wonder-prog-1sg
'I wonder who hit Kaya.'

a. Ban-a sor-ar-sa-n, [$_F$ OYA] Kaya-ya vur-du.
I-dat ask-aor-cond-2sg Oya Kaya-dat hit-pst
'If you ask me, [$_F$ OYA] hit Kaya'.

b. *[$_F$ OYA], ban-a sor-ar-sa-n, Kaya-ya vur-du.

c. *[$_F$ OYA] Kaya-ya, ban-a sor-ar-sa-n, vur-du.

(299) NE zaman Fido Oya-yı ısır-dı?
what time Fido Oya-acc bite-pst
'When did Fido bite Oya?'

a. [$_F$ GEÇEN hafta] Fido Oya-yı ısır-dı.
last week Fido Oya-acc bite-pst
'Fido bit Oya LAST week.'

b. Oya-yı Fido [$_F$ GEÇEN hafta] ısır-dı.

c. *[$_F$ GEÇEN hafta] Oya-yı Fido ısır-dı.

(300) Parti-de KIM konuk-lar-i$_i$ birbirleri-ne$_i$ tanıt-tı.
party-loc who guest-pl-acc each.other-dat who introduce-pst
'Who introduced the guests$_i$ to each other$_i$ at the party?'

a. Parti-de [$_F$ KAYA] konuk-lar-i$_i$ birbirleri-ne$_i$ tanıt-tı.
party-loc Kaya guest-pl-acc each.other-dat introduce-pst
'[$_F$ KAYA] introduced the guests$_i$ to each other$_i$ at the party'.

b. *Parti-de [$_F$ KAYA] birbirleri-ne$_i$ konuk-lar-i$_i$ tanıt-tı.

In (298), though it encodes a piece of backgrounded information, the dative marked NP cannot precede the addressee-oriented adverbial. This is because this NP occupies an S-internal position, as indicated by its occurrence between the focus and the verb. Therefore, the position coming after it is not available for the addressee-oriented adverbial, which can appear only as an immediate daughter of the E. As for (299c) and (300b), these sentences are problematic because their backgrounded constituents are not arranged in accordance with the unmarked word order, S-DO-IO-Verb. Although backgrounded constituents that fall to the left of the focus or to the right of the verb enjoy a high degree of flexibility in terms of linear arrangement, this is not the case for backgrounded constituents that appear between the focus and the verb (i.e. S-internal ones), like those in these examples. (299c) is unacceptable because in such sentences a deviation from the SOV order is not permitted within the S. (300b) is unacceptable because the dislocation of the dative marked anaphor from its base position causes it to occupy a position where it can c-command its antecedent but it cannot be c-commanded by it.

The observations we have made up to now can be summarised as follows:

1. a constituent serving as a nominal focus must receive an A-accent;
2. a non-focal element cannot intervene between two focal ones;
3. the focal accent falls on the head of a nominal focus;
4. contrary to what is usually assumed, the immediately preverbal position is not a syntactic position that is allocated for the special purpose of marking the focus.
5. nominal foci are confined to S-internal positions;
6. elements occurring in a clause external position (either sentence-initially or postverbally) are those that are backgrounded.

Let us now look at the syntactic and prosodic aspects of verbal foci in Turkish.

### 4.2.4 The syntax and phonology of verbal foci

#### 4.2.4.1 Some initial observations:

We will first make some observations on the prosodic marking of verbal foci in Turkish. We will start with examples where the whole of the sentence is in focus. As a sentence is headed by a verb, an all-focus utterance is a typical example of verbal focus. Consider the sentences in (301) and (302), each of which is assumed to be uttered as a response to the Turkish equivalent of a question like 'Did anything interesting happen at the party?' (i.e. which are supposed to be all-focus utterances):

(301) a. [$_F$ Oya KAYA-YA vur-du].
Oya Kaya-dat hit-pst
'Oya hit KAYA.'

b. *[$_F$ OYA Kaya-ya vur-du].

c. *[$_F$ Oya Kaya-ya VUR-DU].

(302) a. [$_F$ Fido OYA-YI ısır-dı].
Fido Oya-acc bite-pst
'Fido bit OYA.'

b. *[$_F$ FIDO Oya-yı ısır-dı].

c. *[$_F$ Fido Oya-yı ISIR-DI].

Of these sentences, only the (a) ones have an appropriate prosodic structure for an all-focus interpretation. The question that needs to be raised at this point is this: what is the distinguishing feature of the position that legitimately receives the focal pitch accent in the (a) sentences? The first thing that catches our eye is that it is immediately preverbal. Recall that many researchers assign a default focus status to this position in Turkish sentences. So, these researchers should be expected to account for the acceptability of the (a) sentences in contrast to the unacceptability of the (b) and (c) ones in the examples in terms of the immediately preverbal realisation of the focal accent. However, as the following examples show, there does not seem to be a direct connection between the slot just before the verb and the marking of verbal foci in Turkish. The sentences in (303) and (304) are supposed to be uttered in the same context as those in (301) and (302) (i.e. as an answer to a question like 'Did anything interesting happen at the party?):

(303) [$_F$ Oya şarap KADEH-I-NI Kaya-ya at-tı].
Oya wine glass-poss3-acc Kaya-dat throw-pst
'Oya threw her wine glass at Kaya.'

(304) [$_F$ Kaya KADEH-I-NI pencere-den düşür-dü].
Kaya glass-poss3-acc window-abl drop-pst

'Kaya dropped his glass from the window.'

In both of these examples, a constituent that does not occur in the immediately preverbal position is felicitously associated with the focal pitch accent.

Notice that in all the examples above the prosodic prominence falls on the argument that comes just after the subject. Assuming that the subject NPs of the given sentences are VP-external, we seem to be justified to propose that it is the VP that is associated with the focal stress and accent in verbal foci (i.e. foci whose head is a verb) in Turkish. Let us see two more examples in order to get a working formulation of this proposal:

(305) Fido [$_{VP}$ YANLIŞLIKLA [$_{VP}$ Oya-yı ısır-dı]].
Fido unintentionally Oya-acc bite-pst
'Fido bit Oya UNINTENTIONALLY.'

(306) Oya [$_{VP}$ bu ŞIŞE-YLE [$_{VP}$ Kaya-ya saldır-dı]].
Oya this bottle-inst Kaya-dat attack-pst
'Oya attacked Kaya with this BOTTLE.'

The constituents receiving the focal stress and accent in these utterances are verbal adjuncts. So, the phrase structural descriptions of the utterances are quite reasonable. According to these descriptions, in both cases the intonational prominence is associated with the leftmost constituent of a VP node. But, interestingly, neither of these utterances is able to receive a reading where the focus is wide enough to include the verb . Both (305) and (306) are confined to a reading with narrow focus on the verbal adjunct. (305) can be uttered only in a discourse context where that Fido bit Oya is taken for granted and the speaker wishes to convey that Fido did that not deliberately but unintentionally. Similarly, (306) can be uttered in a context where (the speaker assumes that) the hearer already knows that Oya attacked Kaya but s/he does not know which instrument she used in doing that or whether she used an instrument. If the intonational prominence is shifted onto the constituent that appears at the leftmost boundary of the lower VP, both sentences will become capable of being used as an utterance with a verbal focus. For instance, (308) would be a felicitous response to any of the questions in (307):

(307) a. Parti-de NE ol-du?
party-loc what happen-pst
'What happened at the party?'

b. Oya parti-de NE yap-tı?
Oya party-loc what do-pst
'What happened at the party?'

c. Oya-yı el-i-nde kırık bir ŞIŞE-YLE g'or-d'u-m. O-nla NE
Oya-acc hand-poss3-loc broken one bottle see-pst-1sg it-inst what
yap-ıyor-du.
do-prog-pst
'I saw Oya with a broken bottle in her hand. What was she doing with it?'

(308) Oya [$_{VP}$ bu şişe-yle [$_{VP}$ KAYA-YA saldır-dı]].
Oya this bottle-inst Kaya-dat attack-pst
'Oya attacked KAYA with this bottle.'

When uttered as an answer to the questions in (307), the focal part of (308) will be the whole sentence, the higher VP and the lower VP, respectively. In each case, the focus will be a verbal one. Taking such examples into account, we propose the following syntax/prosody interface for verbal foci in Turkish:

(309) THE MARKING OF VERBAL FOCUS IN TURKISH

In Turkish, in order for a sentence to be able to receive an interpretation where the focus is verbal (i.e. the head of the focal constituent is the verb), the focal stress and accent must be placed on the first non-empty argument that occupies the leftmost boundary of the lowest VP.

This should be taken only as a working principle, by means of which we can capture many facts about Turkish. The grammatical tools we will use in Chapter 7 will enable us to get rid off 'empty' constituents that are left behind by dislocated constituents as traces. For the time being, traces should be considered mere theoretical tools, which we will use to indicate the unmarked ordering of sentence elements.

The proposal offered above will be elaborated to a further extent later on. However, before going into that, we would like to mention some apparently problematic examples and offer an explanation in which our proposal can plausibly incorporate such examples.

#### 4.2.4.2 A typological characterisation of Turkish

Each of the sentences below has a legitimate syntactic and prosodic structure in the provided discourse contexts:

(310) Parti-de ilginç birşey OL-DU mu?
party-loc interesting anything happen-pst Q
'Did anything interesting happen at the party?'

a. [$_F$ Oya-yı bir KÖPEK ısır-dı].
Oya-acc one dog bite-pst
'A dog bit Oya.'

b. [$_F$ Oya Kaya-ya şarap KADEH-I-NI at-tı].
Oya Kaya-dat wine glass-poss3-acc throw-pst
'Oya threw her wine glass at Kaya.'

c. [$_F$ Kaya pencere-den KADEH-I-NI düşür-dü].
Kaya window-abl glass-poss3-acc drop-pst
'Kaya dropped his glass from the/a window.'

In (310a), it is the object NP that precedes the position associated with prosodic prominence. The focal stress and accent fall on the subject NP. Besides, though it is an all-focus sentence, the constituents of this sentence are not arranged in accordance with the SOV order. In (310b) and (310c), there are two constituents that come before the prosodically marked constituent. Therefore, if we wish to preserve our assumption that in all-focus sentences in Turkish the constituent that receives the focal stress and accent is the (lowest) VP, we have to make two more assumptions:

(311) In Turkish,

a. the VP-external constituent need not be the subject (i.e. the nominative marked NP), and

b. more than one constituent can appear VP-externally under the S.

At first glance, these assumptions might seem counterintuitive. This will especially be the case if we commit ourselves to the assumption that all languages have a phrase structure that is similar to that of English, at least, in terms of the configurational arrangement of the subject and the VP. But, we maintain that this latter assumption should not be taken for granted without question. As Kiss (1995a) puts it:

> As a consequence of the fact that generative research focused on English for a long time, and as a consequence of the assumption that the grammars of all languages are instantiations of one and the same Universal Grammar, it has been hypothesised that the phrase structure,

> involving **a grammatical subject-VP dichotomy** [our emphasis], c-commanded by a single operator position reserved for a WH operator, constitutes the core of sentence structure in every language (p. 3).

We agree with Kiss that "the structural role that the grammatical subject plays in the English sentence may be fulfilled by a constituent not restricted with respect to grammatical function or case in other languages" (p. 3).

In the studies of the volume *Subject and Topic* (Li 1976), it is proposed that languages can be ranked along an axis of *subject prominence* vs. *topic prominence*. Li & Thompson argue that there are four basic types of languages:

1. languages that are subject-prominent;
2. languages that are topic-prominent;
3. languages that are both subject-prominent and topic-prominent;
4. languages that are neither subject-prominent nor topic-prominent.

In a subject-prominent language, the sentence structure is derived by (VP-)externalizing the grammatical subject. In other words, the grammatical subject-VP dichotomy characterises the basic structure of the sentence. In a topic-prominent language, on the other hand, the sentence structure is derived by (VP-)externalizing an 'arbitrary' argument. That is, a distinguishing feature of topic-prominent languages is that they may have grammatical subjects occurring within the VP. Let us evaluate Turkish with respect to this criterion:

On the one hand, we have argued that in some cases a grammatical subject may appear VP-internally (cf. example (310a)). We have also claimed that there may be cases where more than one argument is taken out of the VP (cf. examples (310b) and (310c)). This amounts to saying that we have presupposed that Turkish has a topic-prominent side. On the other hand, a working assumption in our account has been that the process of externalising an argument is not totally arbitrary in Turkish. We have assumed that grammatical subjects like *Oya, Kaya* and *Fido* must appear VP-externally. This assumption has played a crucial role in our identification of the phrase structures of the sentences in (301)-(304). That is to say, we have also recognised a subject-prominent side to Turkish. We will give an account that explains in what cases the grammatical subject is obliged to leave its VP-internal position and in what cases it may remain there in Chapter 6.

Apparently, if Turkish is a language of the third type, then our account up to this point seems to be based on plausible assumptions about the configurational relations between the arguments and the VP. In fact, Li & Thompson's other observations on the typological classification of languages with respect to the given criterion provide further evidence that Turkish is of the third type of languages. Li & Thompson identify some grammatical implications of topic-prominence and subject prominence. Below are three of these, where Tp and Sp are abbreviations for 'topic-prominent' and 'subject-prominent', respectively:

> [i] Surface coding. In Tp languages, there will be a surface coding for the topic, but not necessarily for the subject ...
>
> [i] The passive construction. The passive construction is common among Sp languages. Among Tp languages, on the other hand, passivization either does not occur at all ... or appears as a marginal construction, rarely used in speech ... or carries a special meaning ...
>
> [iii] "Dummy" subjects. "Dummy" or "empty" subjects, such as the English it and there, the German es, the French il and ce, may be found in an Sp language but not in a Tp language ... In a Tp language there is no need for "dummy" subjects. In cases where no subject is called for, the sentence in a Tp language can simply do without a subject. (Li & Thompson 1976, pp. 466-470)

Let us evaluate Turkish with respect to each of these criteria:

In Turkish, there is a surface coding both for the topic and for the subject. The topic always occupies a certain syntactic position (cf. Chapter 5). The grammatical subject, on the other hand, is marked by the case it receives, which is nominative, and by its agreement with the verb. Therefore, with respect to the criterion of *surface coding*, the grammatical implications of both topic-prominence and subject prominence can be found in Turkish.

Turkish has both an active construction and a passive one in its grammatical repertoire. However, in many cases the passive alternative of a construction is rather of a marginal status. The two sentences below are synonymous in terms of both their truth-conditional meaning and their discourse-pragmatic implications. Nonetheless, in everyday language the active sentence will be much preferable to the passive one.

(312) a. Oya-yı Fido ısır-dı.
Oya-acc Fido bite-pst
'Fido bit Oya.'

b. Oya Fido tarafından ısır-ıl-dı.
Oya Fido by bite-pass-pst
'Fido bit Oya.'

Taking such examples into consideration, Turkish could be argued to be more like a topic-prominent language. Yet, Turkish behaves also like a subject-prominent language in that it allows a certain type of passive sentences to be used quite frequently. These are so-called *impersonal passive sentences*, which appear to be the passivized versions of intransitive clauses. An important feature of impersonal passive sentences in Turkish is that their underlying subjects must be understood to be human. Each of the (a) sentences in the following examples is necessarily synonymous with the respective (b) sentence:

(313) a. Bu şehir-de pazar gün-ler-i uyu-n-ur.
this town-loc Sunday day-pl-poss3 sleep-pass-aor

b. Bu şehir-de pazar gün-ler-i insan-lar uyu-r.
this town-loc Sunday day-pl-poss3 people sleep-aor
'People sleep in this town on Sundays.'

(314) a. Uçak-tan paraşüt-süz atla-n-maz.
aeroplane-abl parachute-without jump-pass-aor.neg

b. Insanlar uçak-tan paraşüt-süz atla-maz.
people aeroplane-abl parachute-without jump-aor.neg
'People do not jump from an aeroplane without a parachute.'

The passive versions of the given sentences (i.e. the (a) ones) are likely to be preferred to the active ones in a possible occasion of utterance.

As for the third criterion, Turkish does not have a "dummy" subject. In that respect, it seems to be similar to a topic-prominent language. But, unlike a purely topic-prominent language, a Turkish sentence cannot do without a subject. It must have a grammatical indication of an overt or covert subject. In that respect, it comes closer to a subject-prominent language. Mandarin is one of the languages that is classified as topic-prominent by Li & Thompson. The following Mandarin sentence, for example, is said not to have a grammatical subject:

(315) Zhèr hěn rè.
here very hot
'It is hot in here.'

The Turkish translation of this sentence, however, must have a grammatical subject. More specifically, the NP referring to the location in question must be nominative marked, and thereby, it must be rendered the grammatical subject of the sentence. If it is locative marked, the result is total ungrammaticality:

(316) a. Bu yer çok sıcak.
this place very hot
'This place is very hot.'

b. *Bu yer-de çok sıcak.
this place-loc very hot

What follows from these observations is that Turkish manifests both some of those characteristics peculiar to topic-prominent languages and some of those borne by subject-prominent languages. In other words, Turkish is of the type of languages that are both subject-prominent and topic-prominent. It is worth noting that Li & Thompson include Japanese and Korean in the set of languages that are both subject-prominent and topic-prominent and leave this set open for a possible addition. What is of particular interest is that Turkish is in the same family of languages as Japanese and Korean, the family of Altaic languages. This fact provides further suggestive evidence for our characterisation of Turkish with respect to the typological classification proposed by Li & Thompson.

#### 4.2.4.3 Unmarked word order within the VP

We have established that our analysis of the syntax and prosody of the sentences in (310) (i.e. that the leftmost boundary of the VP of each sentence is delimited by the constituent receiving the focal stress and accent) is a plausible one. Let us now make a small change to the prosodic structures of these sentences and observe the accompanying change in their interpretations:

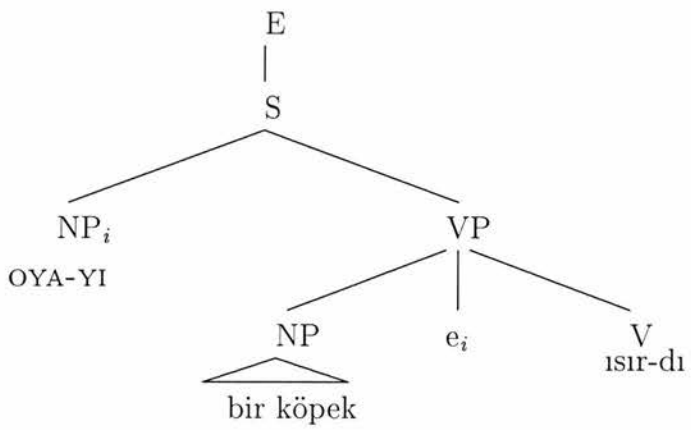
(317) a. OYA-YI bir köpek ısır-dı.
Oya-acc one dog bite-pst
'It was Oya who a dog bit.'

b. Oya KAYA-YA şarap kadeh-i-ni at-tı.
Oya Kaya-dat wine glass-poss3-acc throw-pst
'It was at Kaya that Oya threw her wine glass.'

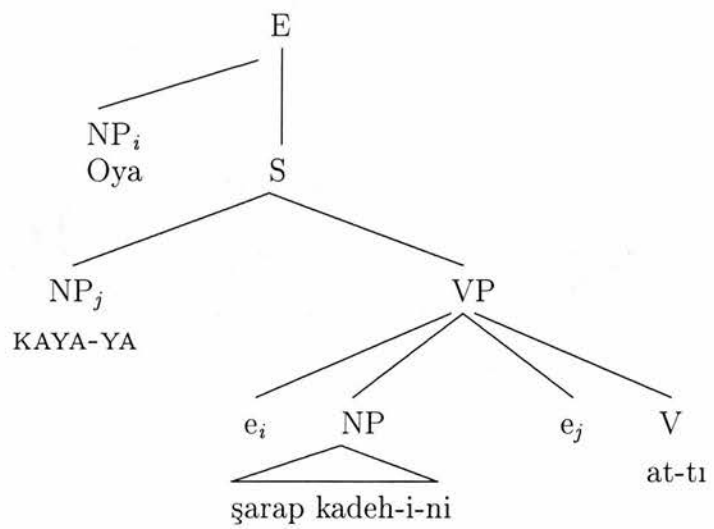
c. Kaya PENCERE-DEN kadeh-i-ni düşür-dü.
Kaya window-abl glass-poss3-acc drop-pst
'It was from the window that Kaya dropped his glass.'

In each case, the focal accent has been shifted one constituent to the left. In their new prosodic structures, all the sentences are restricted to a narrow-focus interpretation, with the focus being the NP associated with prosodic prominence. None of these sentences can be assigned an interpretation where the focal constituent is headed by the verb. For instance, none of them can be a felicitous answer to (the Turkish equivalent of) a question like 'What happened at the party after I left?'. We argue that this is the direct result of the fact that the linear arrangement of all these sentences deviates from the word order which the VP-internal constituents must obey in Turkish. We propose that in Turkish all the immediate daughters of the (lowest) VP are organised in a flat structure in accordance with the order of Subject-Direct Object-Indirect Object-Verb. According to this proposal, all the stressed NPs in the examples in (317) must occur VP-externally, because they do not appear in the position allocated for them in the S-DO-IO-Verb order. In other words, as they do not appear in the position determined according to this ordering, they must have been dislocated from their 'base' position within the VP. We propose the following structures as the phrase structures of the sentences in (317), respectively:

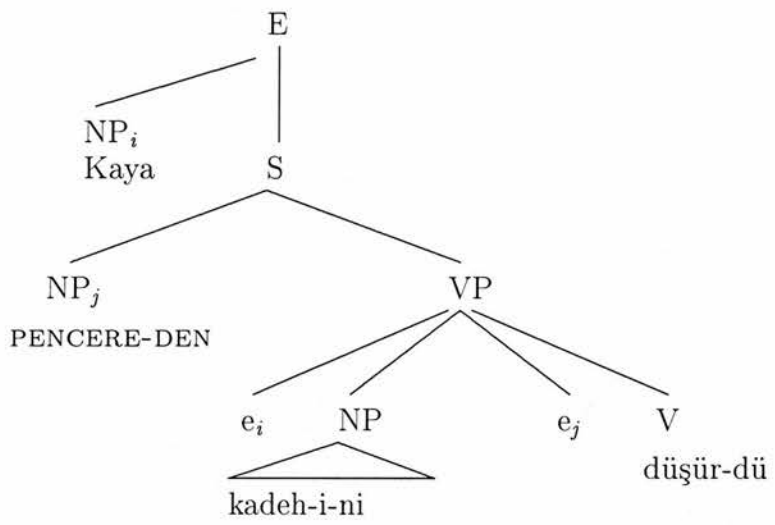
(318) a.



b.




c.




As it should be remembered, according to the proposal we offered in Section 4.2.4.1, in a Turkish sentence with a verbal focus the focal stress and accent must fall on the non-empty argument that appears at the leftmost boundary of the VP. We saw that the placement of the prosodic prominence on another constituent necessarily results in an interpretation where the stressed constituent is the one put into focus. Therefore, in light of the proposed unmarked word order, there is nothing surprising about the examples in (317).

#### 4.2.4.4 The syntactic position of the question marker *mI*

In Section 4.2.1, we suggested that in a question it is the questioned constituent that is the focus of the utterance. We will now see that this suggestion is in total harmony with our proposal about the structural realisation of verbal foci in Turkish.

Turkish has a question particle, *mI*, that serves to make *yes-no* questions. This par-

ticle behaves in exactly the same way as the A-accent does in declarative sentences. If what is questioned is the whole sentence or a verb phrase, then the particle *mI* is associated with the leftmost (non-empty) constituent of the lowest VP. Consider the questions below:

(319) Parti-de NE ol-du? Fido OYA-YI mı ısır-dı?
party-loc what happen-pst Fido Oya-acc Q bite-pst
'What happened at the party? Did Fido bite Oya?'

(320) Parti-de NE ol-du? Oya KADEH-I-NI mi Kaya-ya at-tı?
party-loc what happen-pst Oya glass-poss3-acc Q Kaya-dat throw-pst
'What happened at the party? Did Oya throw her glass at Kaya?'

Both (319) and (320) can be uttered in a discourse context where the whole of the described situation is questioned. That is, the *yes-no* questions in these examples receive all-focus interpretations. In (319), for instance, the speaker just wishes to know whether the hearer is aware of an event which took place at the party and in which Fido bit Oya. If this request is replied with an utterance like the following, this will be a totally coherent bit of conversation:

(321) Bil-mi-yor-um. Ban-a kimse böyle bir olay-dan söz et-me-di.
know-neg-prog-1sg I-dat nobody such one event-abl tell.about
'I don't know. Nobody told me about such an event.'

In an appropriate context, the *yes-no* questions in (319) and (320) could also receive an interpretation where the focus is the VP, not the whole sentence. For instance, it might be the case that Fido did something bad at the party and the speaker just wonders whether that bad action was bite Oya. In such a case, the following would be a felicitous utterance to request the required information:

(322) Fido parti-de NE yap-tı? OYA-YI mı ısır-dı?
Fido party-loc what do-pst Oya-acc Q bite-pst
'What did Fido do at the party? Did it bite Oya?'

Each of the *yes-no* questions in the examples above can be assigned an interpretation with a verbal focus because in each case the NP associated with the question particle, *mI*, can be a legitimate leftmost constituent of the VP. If the question particle is put after a verbal adjunct or a dislocated argument, only that constituent will be in focus:

(323) Fido$_i$ YANLIŞLIKLA mı [$_{VP}$ e$_i$ Oya-yı ısır-dı]?
Fido unintentionally Q Oya-acc bite-pst
'Was it unintentionally that Fido bit Oya?'

(324) FIDO$_i$ mu [$_{VP}$ e$_i$ Oya-yı ısır-dı]?
Fido Q Oya-acc bite-pst
'Was it Fido that bit Oya?'

(325) Oya$_i$ KAYA-YA$_j$ mı [$_{VP}$ e$_i$ kadeh-i-ni e$_j$ at-tı]?
Oya Kaya-dat Q glass-poss3-acc throw-pst
'Was it at Kaya that Oya threw her glass?'

As the English translations indicate these questions are confined to readings where the focus is the sentence element preceding the question particle. None of these questions can be assigned an interpretation where the focal constituent is headed by the verb.

#### 4.2.4.5 Summary

The major claims we put forward in this subsection (i.e. Section 4.2.4) are the following:

1. In Turkish, when the focus is a verbal one (i.e. when the focal constituent is headed by the verb), it is the leftmost (non-empty) complement within the VP that is associated with the focal accent and with the question particle in *yes-no* questions.

2. Turkish, being a language that is both subject-prominent and topic-prominent, can have VP-internal subjects.

3. Complements are arranged in accordance with the order of Subject-Direct Object-Indirect Object-Verb within a VP in Turkish.

## 4.3 A situation-theoretic representation for focus-background structures

In this section, we will offer a situation-theoretic representation format in which the focus-background partitioning of the sentence can be dealt with at the level of semantics.

A common assumption of current theories of the semantics of focus is that the focus feature induces a partition of the semantic representation of the sentence into a component that is in focus and a component that is not in focus (i.e. the background). There are essentially three theories that aim to capture the contribution of the partitioning into focus and background to the semantic interpretation, namely the theory of *structured meanings* (cf. von Stechow 1982, 1983, Cresswell & von Stechow 1982, Jacobs 1983, Cresswell 1985), *alternative semantics* (cf. Rooth 1985) and the *quantifying-in approach* (cf. Karttunen & Peters 1979).[15] Our way of representing focus-background structures in a situation-theoretic framework will come very close to the structured meaning approach. For this reason, we would like to first give a general characterisation of the structured meanings framework.

A structured meaning is a pair where the first element is of a type that can be applied to the second. If this application is carried out, we arrive at the ordinary semantic representation. Below is a more formal definition:

(326) STRUCTURED MEANING:

Suppose $P$ is an entity of a logical type. Then the sequence $\langle \lambda x_1 \ldots x_n Q(x_1, \ldots, x_n), a_1, \ldots, a_n \rangle$ is a *structured meaning* for any $a_1, \ldots, a_n$ such that $\lambda x_1 \ldots x_n Q(a_1, \ldots a_n) = P$.

(von Stechow 1991)

The idea for the contribution of the focus-background partitioning into the semantic interpretation is that focused constituents determine a structured meaning. For example, the focus structures (327a) and (328a) determine the structured propositions (327b) and (328b) respectively:

(327) a. John kissed [$_F$ Mary].

b. $\langle \lambda$ x[John kissed x], Mary$\rangle$

(328) a. [$_F$ John] kissed Mary.

b. $\langle \lambda$ x[x kissed Mary], John$\rangle$

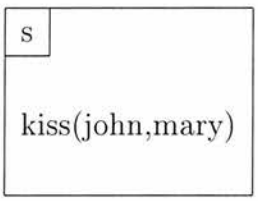
Here, the process determining the (b) structures is obvious. The focus NP is exported leaving a variable which is bound by the $\lambda$-operator. As a result of this

[15] See von Stechow 1991 for a comparison of these three theories of the semantics of focus.

process, we obtain a background part that is of a type that can be applied to the focused part.

Now, exploiting the ideas underlying the structured meaning approach, we will develop a situation-theoretic representation format within which the contribution of the focus-background partitioning to the interpretation of the sentence can be captured. Let us use the structure in (327a) to illustrate our proposal. Ignoring its informational structuring and the various restrictions imposed on its interpretation, the semantic representation of sentence (327a) will be as follows:

(329)




The first mechanism we need is an abstraction operation that will enable us to export the focus (i.e. *mary*) from this propositional object.

The notion of *abstraction* in situation theory is based on work in Aczel & Lunnon (1991) and Lunnon (1991). In general terms, it is an operation by means of which a constituent of an object (or, more precisely, a parameter of a parametric object) is effectively removed, leaving behind only its 'slot'. In that sense, it is not different from the notion of abstraction used in the $\lambda$-calculus. However, there is a crucial difference between abstraction in the $\lambda$-calculus and that in situation theory (i.e. Aczel-Lunnon abstraction). While in the former only serial abstraction is available (i.e. at each time only one variable can be abstracted over),[16] in Aczel-Lunnon abstraction, several parameters may be abstracted over simultaneously, as well as serially.

The object yielded by an abstraction operation is called an *abstract*. An abstract is represented by putting the parameter symbols together with their indices in a tab at the top of the box representing the object which the abstracted parameters

[16] As Cooper (1996) points out, while in standard $\lambda$-notations one may have expressions such as

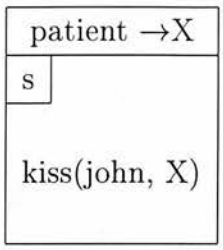
(330) $\lambda xyz[\psi(x,y,z)]$

this is to be construed as an abbreviation for

(331) $\lambda x[\lambda y[\lambda z[\psi(x,y,z)]]]$

belong to. For example, the proposition-abstract which is obtained by abstracting away *mary*, which is the focus, from (329) can be represented as follows:[17]

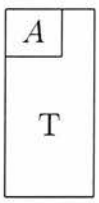
(334)




This will be the background part of our representation.

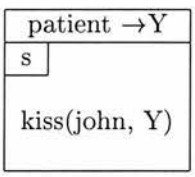
As stated in Section 3.1.2, a proposition of the form $s \models \sigma$ (e.g. (329)) is called an *Austinian* proposition. A second kind of situation-theoretic proposition is obtained by *predicating* a proposition-abstract, which is also called a *type*, of an assignment. If $\boxed{T}$ is a type term and $A$ is an assignment term then

(335)



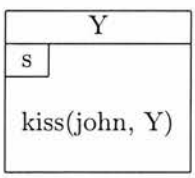

[17]An important property of abstracts is that it does not matter which parameter symbols are used to represent the roles (which is because the particular parameters are abstracted away). Therefore, the proposition-abstract represented below is identical to (334):

(332)




It is also possible to leave the roles of the abstracted parameters unlabelled. For instance, the proposition-abstract represented above could also be written as:

(333)



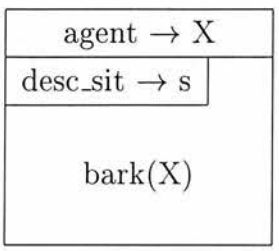

Following standard practice in logical notation, such representations are taken to abbreviate those where the role indices are the natural numbers 1, ..., $n$.

represents the proposition that $A$ is of the type $T$. For instance, the predication of the assignment

(336) [agent $\rightarrow$ fido]

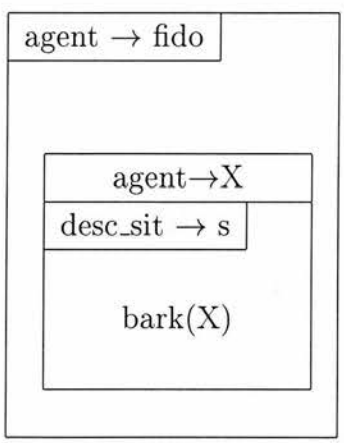
by the type

(337)




results in the following proposition:

(338)

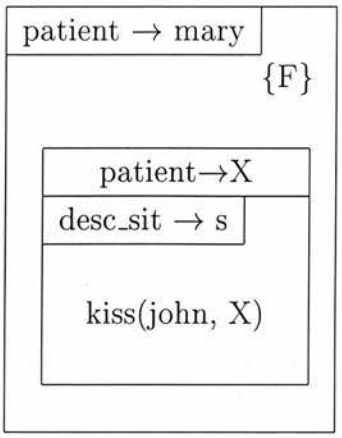



A proposition of the kind exemplified above is called a Russellian proposition. We propose to use Russellian propositions in order to capture the focus-background structuring of sentence interpretation.[18] In the representation format we propose for focus-background structures, the focus will be an assignment labelled by F (where F stands for focus)[19] and the background will be a type predicated of that assignment. For example,

[18]In Section 5.5, we will propose to use Russellian propositions also to capture the topic-comment structuring of sentence interpretation.

[19]In EKN, if $B$ is a term of any sort, then $B_a$ is a term of the same sort, labelled by $a$.

(339)



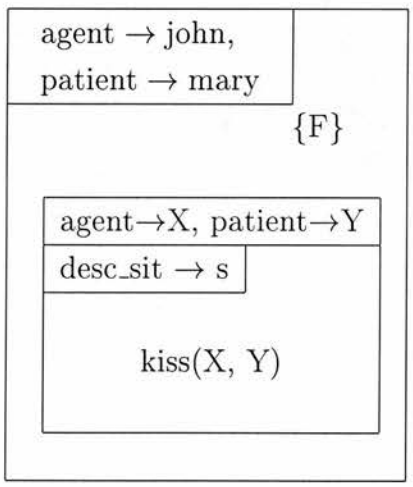

represents the same proposition as (329), except that it also structures the focus-background partitioning of the interpretation.

As it is possible to abstract over more than one parameter, we can easily deal with cases of multiple foci. To give an example, the structured proposition corresponding to (340a) will be as in (340b):

(340) Who kissed whom?

a. [$_F$ John] kissed [$_F$ Mary].

b.

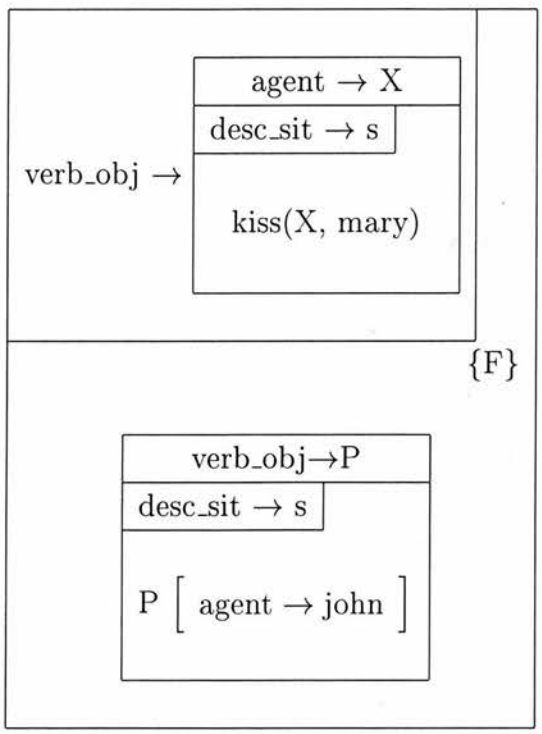



The examples above illustrate cases of nominal foci. The treatment of verbal foci will be parallel to that of nominal ones. But, this time what is abstracted over will be a type where all background constituents are abstracted over, which will be the semantic object denoted by the verbal focus. For instance, (341b) will be the proposition corresponding to (341a):

(341) What did John do?

a. John [$_F$ kissed Mary].

b.

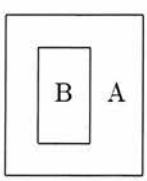



P [ agent → john ] represents the application of P to [ agent → john ]. [20]

To sum up, the process determining the focus-background partitioning of the proposition consists of two steps. Firstly, the constituent denoted by the focus is abstracted over. Secondly, the resulting abstract is predicated of an F-labelled assignment which assigns the focus constituent to an index which is the same as the one used for the parameter abstracted in the first step. If there is more than one focus, these two operations are carried out in parallel for each focus.

[20]In the Extended Kamp Notation (EKN), the application of an abstract $\boxed{B}$ to an assignment $A$ is represented as follows:

(342)



## 4.4 Summary

Below are the major points we made in this chapter:

1. In Turkish foci are confined to clause-internal positions, while background elements may appear clause-externally.
2. Turkish foci receive an H* accent.
3. In nominal foci, the focal accent falls on the nominal head.
4. In verbal foci, the focal accent falls on the leftmost complement within the VP.
5. Nominal focus can be represented by an F-labelled assignment to which the abstract obtained by abstracting over the focus constituent is applied.
6. Verbal focus can be represented by an F-labelled abstract that is applied to background constituents.

# Chapter 5

# The Topic-Comment Analysis of the Sentence

## 5.1 Introduction

It has been pointed out by many researchers that an approach resting solely on the focus-background dichotomy will not be capable of capturing all aspects of the informational articulation of sentences (cf. Halliday 1967, 1985; Dahl 1974; Välimaa-Blum 1988; Vallduví 1990, 1993; inter alia). All these researchers have maintained that a notion of *topic* is required in order to give a complete informational analysis of sentences.[1]

In most general terms, the topic of a sentence is what the sentence is **about**. That is, the key concept in the characterisation of the topic is that of aboutness. For instance, the topic-test offered by Reinhart (1982) is based on just that concept of aboutness:

Reinhart (1982) offers a test to identify the constituent that functions as topic. Reinhart's test is of the following form:

(343) Speaker A: Tell me about X.
Speaker B: ... X ... = TOPIC
(Reinhart 1982)

[1]Different terms have been used to refer to this notion, such as 'theme' (Halliday 1967, 1985), 'S-topic' (Välimaa-Blum 1988) and 'link' (Vallduví 1990, 1993). The term which we will use will be 'topic'.

According to the request made by A, B's utterance will be about X. Therefore, X will serve as the topic.

There are two points to note about topic-tests in general. First, the exact form of the test does not matter. Provided that attention is drawn to aboutness, the expression 'Tell me about X' in Reinhart's topic-test can be replaced with another one. For example, Vallduví (1990, 1993) uses the expression 'What about X?' for the same purpose. Second, in order for an utterance to have a topic it need not be actually preceded by such expressions. The idea is that a sentence element, say X, can be taken to be the topic, as long as its sentence is utterable as an appropriate reply to a possible request like 'Tell me about X' or 'What about X?'.

People certainly have some intuitions concerning what sentences are about. Consider the question-answer pair in (344):

(344) a. What did Mary do to John?

b. Mary [$_F$ HIT] John.

One might expect that many people would consider sentence (344b) to be about Mary. However, would this be sufficient to be able to state that the topic of this sentence would be *Mary* when uttered in a context like the one above? The answer to this question seems to be no. Sentence (344b) could be uttered as an appropriate reply to either of the following requests:

(345) a. What about Mary? What did she do to John?

b. What about John? What did Mary do to him?

According to our topic-tests, the topic would be *Mary* in (a), and *John* in (b).

Apparently, confining ourselves to the criterion of aboutness, we can select any of the background elements as the topic of the sentence. The reason is simple: the sentence could be thought of as being about the entity denoted by any of these elements. But this fact renders the basis for postulating the notion of topic (as a linguistically relevant notion) distinctly unstable. If any of the background elements can be assigned a topical function (on the basis of the criterion of aboutness), what is the linguistic value of having a notion of topic (in addition to that of background)? In Section 5.2 we will try to provide an answer to this question. More specifically, we will attempt to show that a topical element (i.e. an element which the sentence

seems to be about) linguistically manifests some properties which distinguish it from the other background elements.

Having consolidated our basis for postulating the notion of topic, we will have a look at different functions performed by topics (Section 5.3). Afterwards, we will be concerned with the question of how to represent topic-comment structures in situation theory (Section 5.4). Finally, we will provide a topic-comment analysis of Turkish sentences (Section 5.5).

## 5.2 Topic as a distinguished background element

In this section, we aim to show that topics tend to be distinguished from non-topical elements in both formal and interpretive terms. The evidence we will provide to support this claim falls into four categories: syntactic, phonological, morphological and semantic. Let us look at each kind of evidence in turn.

### 5.2.1 Syntactic evidence

Some languages have developed syntactic mechanisms to distinguish topics from other sentence elements. For example, according to Vallduví (1990, 1993), in Catalan, which he argues to be an underlyingly VOS language, topics must always be left-detached to a sentence-initial position. The following sentence may be an answer to the Catalan equivalent of a question like 'What about Pere? What did he do to the beans?':

(346) $[_T$ El Pere$_1$ $[_F$ se'ls$_2$ va MENJAR e$_2$ e$_1$,] els fesols$_2$.
Pere obj 3s-pst-eat the beans
'$[_T$ Pere] $[_F$ ATE] the beans.'

(adopted from Vallduví 1993)

As this example illustrates, in Vallduví's account, topical and non-topical background elements in Catalan occupy left and right peripheral positions of the sentence, respectively. That is, they are syntactically separated from each other. It is worth noting that Vallduví's account of the syntactic realisation of the informational partition of the sentence in Catalan is in entire harmony with his formulation of the informational analysis of the sentence in general. He proposes a trinomial articulation that divides sentences into a focus and a *ground*, where the ground is further

divided into a *link* and a *tail*. Vallduví's *ground* and *link* correspond to what we call *background* and *topic*, respectively. As (346 illustrates, it appears that two different syntactic positions are allocated for encoding the topic and tail components of the background in Catalan sentences.

In English, the equivalent of Catalan left-detachment is topicalization. However, unlike in Catalan, topicalization is not an obligatory operation in English. (347a), with a left-dislocated topic, and (347b), with a topic in situ, are both felicitous in the given context:

(347) What about the beans? What happened to them?

a. $[_T$ The beans$_i]$ $[_F$ FRED ate] $e_i$.

b. $[_F$ FRED ate] $[_T$ the beans].

With regard to the configurational description of the syntactic position of left-detached topics, Vallduví (1990), working within a GB framework, describes it as a position left-adjoined to IP. Vallduví & Engdahl (1994) make a similar proposal, but this time within an HPSG framework: they postulate a language particular *immediate dominance (ID) schema* that introduce these phrases as sisters of S.[2]

Another proposal about the syntactic realisation of topics, which is more in line with the analysis we will offer for Turkish topics, is made by Rudin (1985), Aissen (1992) and King (1993). These linguists, following Banfield (1973), postulate an E-labelled root projection for the languages they examine in a Chomskyan framework. They argue that certain topics, which they call *external* topics, occur clause-externally under the E node. Let us have a brief look at their accounts.[3]

Rudin (1985) argues that Bulgarian has external topics which are dislocated to the left of S′, as a daughter to the node E. Bulgarian left-dislocated topics, according to Rudin, are always definite and associated with a resumptive pronoun. *Ivan* in the following Bulgarian sentence is such a topic:

(348) $[_E$ Ivan$_i$ $[_{S'}$ nego$_i$ vidjah včera]].
Ivan him saw-1s yesterday
'Ivan, I saw him yesterday.'

[2]Immediate dominance schemata are simply phrase structure rules, which in effect serve as templates for permissible configurations of immediate constituency (cf. Chapter 7).

[3]The exposure of these linguists' accounts of the syntactic realisation of topics is based on King (1993).

Aissen (1992) makes a similar proposal for the syntactic structuring of topics in Tz'utujil, Tzotzil, and Jakaltek (which are Mayan languages). She takes the core clause to be rooted by CP. She claims that Tzotzil and Jakaltek have only external topics, while Tz'utujil is a language with internal topics. That is, in the former two languages topics occur outside the core clause (i.e. CP) under E, whereas in the latter language they can be within the CP. The most important evidence for the CP-external occurrence of topics in Tzotzil and Jakaltek is that topics cannot occur in subordinate clauses in these languages. In Tzotzil, topics are preceded by a topic marker, *a*, and usually take a definite determiner. As the following example illustrates, it is not possible for them to appear in embedded clauses:

(349) a. liyalbe li xun-e ti taxtal li petul-e. (Tzotzil)
he.told.me DET Xun-ENC COMP comes DET Petul-ENC
'Xun told me that Petul was coming.'

b. *liyalbe li xun-e ti taxtal [$_T$ a li petul-e].
he.told.me DET Xun-ENC COMP comes TOP DET Petul-ENC
'Xun told me that [$_T$ Petul] was coming.'

c. *liyalbe li xun-e ti [$_T$ a li petul(-e)]
he.told.me DET Xun-sc enc COMP TOP DET Petil(-ENC)
taxtal(-e)
comes(-ENC)
'Xun told me that [$_T$ Petul] was coming.'

In contrast to Tzotzil and Jakaltek topics, Tz'utujil topics can occur in embedded clauses. In this language topics precede the negative marker *ma*:

(350) aa xwaan n-0-b'ij chi [$_T$ ta mari'y] ma t-r-aajo' (Tz'utujil)
youth juan says that miss Maria NEG want
'Juan says that [$_T$ Maria] doesn't want it.'

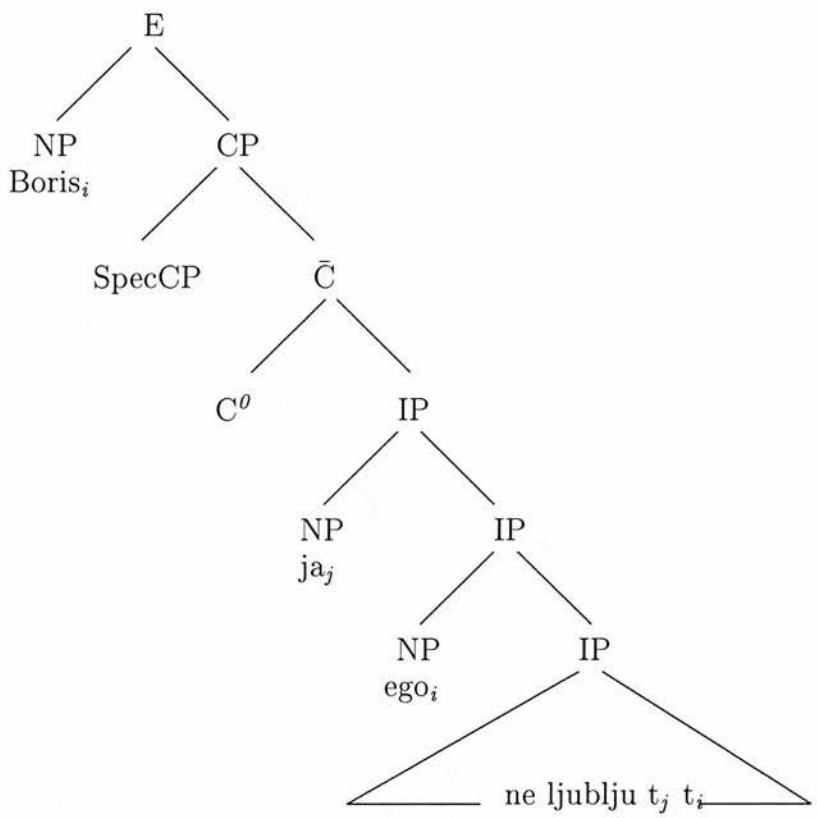
King (1993) makes similar observations for Russian. She argues that Russian is an underlyingly VSO language and all arguments of the verb, including the subject, are projected in the VP at D-structure. In Russian, according to her, external topics are not arguments of the verb, although they may be coreferential with one. Besides, they are in the nominative case, regardless of the case or grammatical function of pronouns with which they are coreferential:

(351) [$_T$ Boris$_i$], ja ego$_i$ ne lyublju.
Boris I him not like

$[_T$ Boris$_i$], I don't like him$_i$.' (Gundel 1988:185)

The partial structure for (351) is shown below:

(352)




Russian internal topics are arguments of the verb. They bind a trace in the clause. In King's account, they are right adjoined to IP. There are two internal topics in the example above: *ja* 'I' and *ego* 'him'.

As a final remark about syntactic peculiarities of topics, we would like to briefly note a fact about Turkish, which we will exemplify in Section 5.4. As will be remembered from Section 4.2, in Turkish it is possible to find a background element that occurs between the focus and the verb. However, this fact cannot be generalised to all kinds of background elements. Topics differ from others in that they have to be left- or right-detached to a peripheral position of the sentence.

### 5.2.2 Phonological evidence

Another distinguishing property of topics is that they are associated with a special accent in some languages. For example, topics in English are associated with a

LH* accent, which is called a B accent in Jackendoff's (1972) terminology. It is a common assumption that English topics require this accent irrespective of whether they occupy a left-hand position or not. Henceforth, an element associated with a topic-related pitch accent will be written in boldface:

(353) Well, what about Fred? What did he eat?
[$_T$ **Fred**] ate the BEANS.

(354) Well, what about the beans? Who ate them?
FRED ate [$_T$ the **beans**].

As will be briefly discussed in Section 5.4, Turkish employs the same accent for the same purpose, but only optionally.

One point that is worth noting is that the topic-related pitch accent is not the same in all languages. For instance, German topics are like English ones in that they require a pitch accent. This is shown with a subject in (355) and a topicalized element in (356):[4]

(355) What about the president?
[$_T$ **Der Präsident**] wird GEWÜHLT.
'The president's ELECTED.'

(356) What about sleeping? Did any of you get any sleep?
[$_T$ **Geschlafen**] hat KEINER von uns.
'As for sleeping, NONE of us slept.'

However, the pitch accent used for marking German topics is not a LH* one. Féry (1992) observes that the topical accent may be either a raising tone (L*) or a falling tone (H*) in German.

### 5.2.3 Morphological evidence

A third strategy used by some languages to signal that a sentence element is distinguished from others as a topic is to associate it with a specific particle. We already

[4]The examples are due to Vallduví (1993).

saw an example of the use of a particle to mark the topic: in Tzotzil topics are preceded by the topic marker *a*.

The Japanese particle *wa* is perhaps the morphological item that has been studied the most in its relation to the marking of topics (cf. Kuno 1972, 1973; Hinds et al. 1987). It is a frequently recognised fact that this particle is used in a fairly systematic way to signal the topic of a Japanese sentence. Sentence (357) can only be interpreted as a statement that is particularly about John (e.g. as an answer to the query 'What about John? What is he doing?'):

(357) John wa hasitte iru.
John TOP running is
'Speaking of John, he is running.'

When the topic marker *wa* is replaced by the grammatical subject marker *ga*, *John* receives a non-topical interpretation. The sentence in (358) could be uttered as an answer to a question like 'Who is running?' or as a neutral description of a situation where John is running:[5]

(358) John ga hasitte iru.
John SUBJ running is
'John is running.'

Korean is another language that has a particle invested with the function of marking a topical sentence element. It has been suggested that the topic and subject information are encoded, respectively, by the topic marker *nun/un* and the subject or nominative case marker *ka/i* in this language (cf. Kim 1991, Lee 1987). This is shown in the following examples (adopted from Choi 1995):

(359) a. Mary-nun John-ul manna-ko iss-ta.
Mary-top John-acc meet-inf be-dcl
'[$_T$ Mary] is meeting John.'

b. Mary-ka John-ul manna-ko iss-ta.
Mary-nom John-acc meet-inf be-dcl
'Mary is meeting John.'

[5]See Section 5.3 for a brief discussion of 'neutral' descriptions of situations under the rubric of 'thetic' statements.

Sentence (a) will be an appropriate response to a question like 'What about Mary? What is she doing this afternoon?', whereas sentence (b) needs to be uttered with a non-topical reading on *Mary* (e.g. as an answer to the question 'Who is meeting John?').

### 5.2.4 Semantic evidence

Topics manifest distinguishing properties also at the level of semantics. In this section, we will briefly mention two of these properties, using Turkish data. A more general and more detailed discussion of this issue will be presented in Section 6.2.

Consider the following example:

(360) a. Arı OYA-YI sok-tu.
bee Oya-acc sting-pst
'The bee stung OYA.'
'OYA was bee-stung.'

b. **Arı** OYA-YI sok-tu.
bee Oya-acc sting-pst
'[$_T$ The **bee**] stung Oya.'

The only formal difference between (360a) and (360b) is that the subject of the former is unaccented, while that of the latter is associated with a topic-related accent (i.e. a B accent). What is of significance for us is that this is accompanied by an interpretive difference between the two sentences. As indicated in the translations, the subject of (360a) can be assigned either a weak incorporated reading or a strong definite one. The subject of (360b), on the other hand, is confined to the definite reading. This state of affairs exemplifies a general constraint on topics, namely that topics must be strong. This constraint does not apply to non-topical background elements, as illustrated by the second translation of (360a).

A second constraint on topics is that they seem to take wider scope than non-topics. Consider (361):

(361) [$_T$ Bir **ağac-a**] iki ÇOCUK tırman-dı.
one tree two child climb-pst
'Two CHILDREN climbed [$_T$ a **tree**].'

In this example, the dative NP, which is marked as the topic, has scope over the subject. The only reading available for the given sentence is this: there is a tree such that two children climbed it. However, when the dative NP is used as a non-topical background element, it can be assigned either the wide scope reading or the narrow scope one. Consider the following question-answer pair:

(362) Bir ağac-a KIM tırman-dı?
one tree-dat who climb-pst
'Who climbed a tree?'

Bir ağac-a [$_F$ iki ÇOCUK] tırman-dı.
one tree two child climb-pst
'[$_F$ Two CHILDREN] climbed a tree.'

Here the dative is not marked as the topic. This makes it possible for the response sentence to be interpreted as meaning that for every child in question there is some tree or other such that the child climbed it.

We seem to have provided sufficient evidence that justifies the introduction of the notion of topic in order to distinguish some background elements from others. Let us now have a closer look at this notion from a functional point of view.

## 5.3 Topics as multi-facet entities

The notion of topic has not been characterised in a uniform manner. In general, the topic of a sentence has been assigned three different functions by different researchers:

1. The topic is what 'links' the sentence to the hearer's mental world (cf. Reinhart 1982; Vallduví 1990, 1993;...).
2. The topic plays an important constructional role for the organisation of text (cf. Daneš 1974;...).
3. The topic is a subject of predication (cf. Strawson 1971; Gundel 1974; Danš 1974; Reinhart 1982; Sasse 1987; Erteschik-Shir 1993; Peregrin 1995;....).

Before going into the explication of these three functions, we would like to have a brief look at a view of linguistic meaning offered by Halliday 1985, because this view provides a perfect framework for the multi-functional characterisation of topics.

### 5.3.1 Halliday's tripartite view of linguistic meaning

Halliday (1985) identifies three kinds of meaning that are embodied in human language. He argues that:

> All languages are organised around two main kinds of meaning, the 'ideational' or reflective, and the interpersonal or active. These components, called 'metafunctions' in the terminology of the present theory, are the manifestations in the language of the two very general purposes which underlie all uses of language: (i) to understand the environment (ideational), and (ii) to act on the others in it (interpersonal). Combined with these is a third metafunctional component, the 'textual' which breathes relevance into the other two. (1985, p. xiii)

In its ideational or reflective aspect, language enables human beings to make a mental picture of reality (i.e. to reflect it at an abstract level by means of mental constructs). "Usually when people talk about what a word or a sentence 'means' it is this kind of meaning they have in mind" (p.101).[6] In this sense, linguistic meaning resides in a relation between expressions and parts of the reality described by these expressions.

In its interpersonal aspect, language functions as a relation of exchange between a speaker and a hearer.[7] That is, in this sense language is a communicative process. At this dimension, linguistic meaning is realised as a relation between the expression and the hearer's mental state.

Both the reflective and communicative functions of language can be realised in a textual environment. Textual meaning is relevance to the context created by a text: both the preceding and following text.

Finally, we should note that each sort of linguistic meaning also bears relevance to the speaker's mental state as every expression comes into being as a result of the speaker's cognitive activity.

---

[6] A crucial assumption underlying situation theory is that the information contained in a statement cannot be confined to the facts about the situation it describes. Barwise & Perry (1983) call this the *fallacy of misplaced information* and argue that the statement can also provide information about other parts of reality. In Halliday's terminology, this amounts to saying that a statement conveys more than its reflective meaning.

[7] Here, the term 'speaker' is used as a cover term for both speaker and writer and the term 'hearer' denotes any kind of addressee in a linguistic event.

Interestingly, each of the functions assigned to topics corresponds to one kind of linguistic meaning identified by Halliday.

### 5.3.2 Topics and the organisation of text

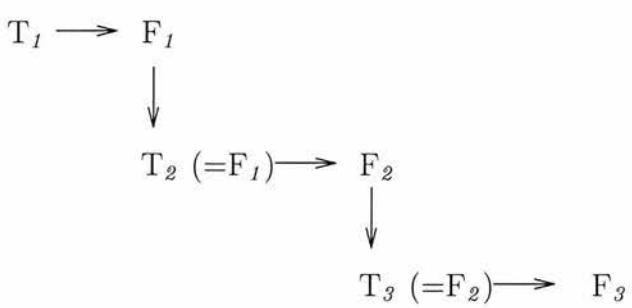
The interaction of topics with their text or discourse environment has been the concern of many linguists (e.g. Hankamer 1971, Kuno 1972, Prince 1981, Ward 1985, Ward & Prince 1991). We will not go into the vast linguistic literature about this matter. We will only mention a particular proposal, namely Daneš's (1968, 1970a, 1970b, 1974) work on the role of topics in the organisation of the text, which seems to us to be one of the most developed accounts of the textual function of topics.

An important property of texts is that they have to be 'coherent'. That is, their 'underlying structure' must display a certain degree of continuity. According to Daneš (1974), who uses the term 'theme' instead of 'topic', text coherence "is represented, *inter alia*, by THEMATIC PROGRESSION (TP)." By this term he means "the choice and ordering of utterance themes, their mutual concatenation and hierarchy, as well as their relationship to the hyperthemes of the superior text units (such as the paragraph, chapter,...), to the whole text, and to the situation" (p.114). Daneš presents three main types of TP:

(1) *Simple linear TP* (or *TP with linear thematization (i.e. topicalization) of foci*[8]):

This is the most elementary, basic type of thematic progression. Briefly, each focus becomes the topic of the next utterance:

(363) a. <u>formulation:</u>




[8]Daneš employs the term 'rheme' to refer to the focus of a sentence.

b. Example:

The first of the antibiotics was discovered by Sir Alexander Fleming in 1928. He was busy at the time investigating a certain species of germ which is responsible for boils and other troubles.

(from Daneš 1974)

(2) *TP with a continuous (constant) topic:*

In this type one and the same topic appears in a series of utterances, but not necessarily in the same wording:

(364) a. Formulation:

$T_1 \longrightarrow F_1$
$\downarrow$
$T_1 \longrightarrow F_2$
$\downarrow$
$T_1 \longrightarrow F_3$

b. Example:

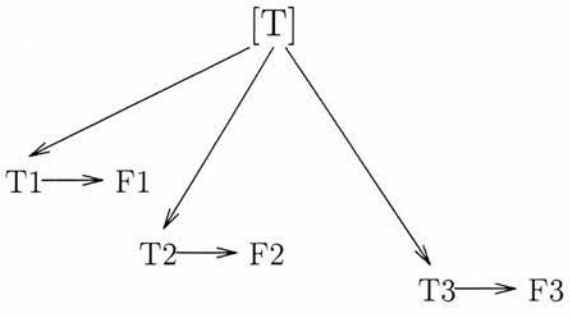
The Rousseauist especially feels an inner kinship with Prometheus and other Titans. He is fascinated by any form of insurgency... He must show an elementary energy in his explosion against the established order and at the same time a boundless sympathy for the victims of it... Further the Rousseauist is ever ready to discover beauty of soul in anyone who is under the reprobation of society.

(from Daneš 1974)

(3) *TP with derived topics:*

In this type, the particular utterance topics are derived from a 'hypertopic' (of a paragraph, or other text section):

(365) a. Formulation:




b. Example:

> New Jersey is flat along the coast and southern portion; the northwestern region is mountainous. The coastal climate is mild, but there is considerable cold in the mountain areas during the winter months. Summers are fairly hot. The leading industrial production includes chemicals, processed food, coal petroleum, metals and electrical equipment. The most important cities are Newark, Jersey City, Paterson, Trenton, Camden. Vacation districts include Asbury Park, Lakewood, Cape May, and others.
>
> (from Daneš 1974)

To sum up, in all three types of thematic progression the topic serves to connect the sentence to the preceding text or to the discourse structure created by this text. Besides, as implicitly indicated by the diagrammatic formulations, it serves as the point of departure for the further development of the discourse through the addition of a piece of focal information.[9] That is, the topic functions as a 'bridge' between the information accumulated up to a certain point of text and the focal information encoded after that point.

### 5.3.3 Topics as 'anchors' to the hearer's mental state

Topics are also examined within a communicative paradigm, which includes a speaker and a hearer. A clearly worked out proposal about the communicative function of

[9]Daneš also suggests that another factor for text coherence is the presence of a certain focal sequence of semantic relations obtaining between the particular foci. However, this is not a proposal worked out to an extent where standardised types of focal sequences (like those of thematic sequences) are detected.

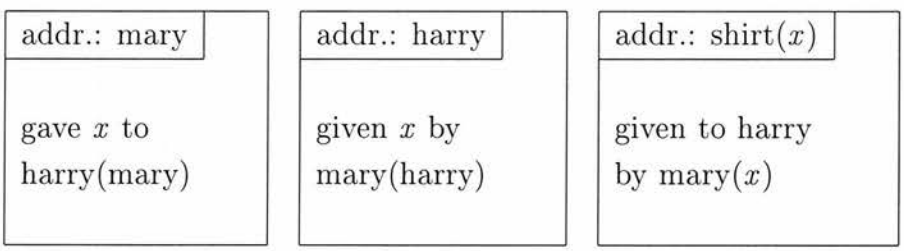
topics is found in Vallduví's (1990) work on *information packaging*. Vallduví uses this latter term to refer to the communicative aspect of sentence meaning:[10]

> A sentence, in one of its facets, may be viewed as a structural vehicle used to transfer some piece of knowledge (a proposition) from speaker to hearer. Information packaging is the speaker's tailoring of this structural vehicle to suit some 'communicative' aspect of the transfer of knowledge (propositional content) to the hearer. (Vallduví 1993:2)

More precisely, according to Vallduví, information packaging has to do with what part of the sentence constitutes new information (which he equates with the focus of the sentence) and where and how that information fits in the hearer's knowledge-store. He describes the hearer's knowledge-store by means of the file metaphor introduced in Heim's file Change Semantics (Heim 1983). Briefly, in the theory of discourse model proposed in Heim (1983), the discourse is represented by a file that consists of file cards. File cards stand for discourse entities. Before the discourse begins the hearer has a file with zero file cards ($F_0$). As the discourse progresses file cards are added and updated. For instance, after a discourse-initial utterance of (366), the file (representing the discourse) will have the cards in (367):

(366) Mary gave a shirt to Harry.

(367)




In Heim's terms, (366) has caused a change from $F_0$ to $F_1$.

Vallduví applies Heim's file metaphor to the hearer's knowledge-store as follows:

[10]The term *packaging* was first introduced by Chafe (1976):

> I have been using the term *packaging* to refer to the kind of phenomena at issue here, with the idea that they have to do primarily with how the message is sent and only secondarily with the message itself, just as the packaging of toothpaste can affect sales in partial independence of the quality of the toothpaste inside. (Chafe 1976:28)

> The knowledge-store is taken to be a large file with a number of file cards or ADDRESSES. Each address denotes an entity and under each address there are a number of entries specifying attributes and relations pertaining to that entity. Unlike in Heim's, there is no file $F_0$ before the beginning of a discourse, since the hearer's knowledge-store contains addresses denoting hearer-old discourse-new ('unused') entities. (Vallduví 1990:68)

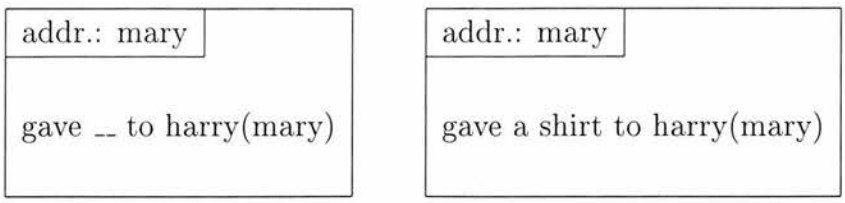
The communicative facet of topics, according to Vallduví, shows up in the process of modifying and updating this knowledge-store. The topic (or, in his terminology, the link) serves to 'anchor' the sentence to the hearer's knowledge-store. To be more specific, in his account of the informational articulation of the sentence, the background corresponds to the elements that indicate where and how the information encoded by the focus must be entered into the hearer's knowledge-store: the topic provides the address of the file card where the focal information will be entered and the tail directs the hearer to the specific record (on that file card) which the focus will complete or change.

In Heim's approach, as illustrated in (367), the same information may be redundantly recorded on more than one file card. In fact, the propositional content encoded in a given sentence is recorded on every file card whose referent is evoked in the discourse. In Vallduví's approach, this redundancy is avoided because the information is recorded only on the file card 'pointed to' by the topic. For example, suppose that sentence (366) is uttered as a response to (368):

(368) What about Mary? What did she give to Harry?

In this case, *Mary* will be the topic. This means that the address 'mary' in the hearer's knowledge-store will be designated as the address under which the information encoded by the focus of the sentence must be entered. Ignoring previous entries, the file card bearing this address will look like as in (369) before and after the utterance of the sentence. The blank (__) indicates that what Mary gave to Harry is unknown to the hearer:

(369) Before: After:




As Vallduví's approach requires a single entry for an utterance of a sentence, it is more efficient than Heim's, which may need more than one entry for a sentence. A question comes to mind at this point: how can the hearer in this example get access to the recorded information through the other addresses? For example, later on, s/he may face a question like:

(370) What about Harry? What did Mary give to him?

This will direct him/her to the file card addressed with 'harry', since *Harry* is the topic. However, s/he will still be able to retrieve and convey the requested information. This means that the information recorded on the file card allocated to Mary is somehow available to the one allocated to Harry. Vallduví suggests that in a single-entry file system this availability may be achieved in two ways. "The data may be entered under the other addresses at a later stage, or the other addresses may get a cross-reference index corresponding to the [current entry-address] through which the relevant knowledge stored under [this address] becomes accessible" (p.73).

Having seen the key points of a plausible proposal on the communicative function of topics, let us now turn to the reflective function of these elements.

### 5.3.4 Predication and topics

**Predication and propositions:**

The reflective (or ideational) content of a declarative sentence corresponds to the proposition it expresses. Speas (1990) points out that:

> At least since Aristotle's time, scholars have been debating the question of whether semantic representations divide a proposition into *Subject* and *Predicate*, and if so, how this division is reflected in the syntactic structure. There is clearly a good deal of evidence in favour of such a distinction, although whether the distinction is syntactic, semantic, or both remains unclear. (p.99)

Let us have a quick look at the syntactic and propositional sides of the subject-predicate relation.

**The syntax of the subject-predicate relation:**

The most straightforward syntactic relation that holds between a subject and a predicate (at least in some languages including English) is the one expressed below (cf. Williams 1980):

(371) The subject must c-command its predicate.

For instance, in (372) a syntactic relation of predication holds between the NP *John* and the rest of the sentence (i.e. the VP). But, in (373) it is *Mary*, but not *John*, that functions as the subject of (syntactic) predication:

(372) $[_S$ John $[_{VP}$ kissed Mary]].

(373) $[_S$ Mary $[_{VP}$ was kissed by John]].

From these examples, it should not be concluded that there is a one-to-one correspondence between grammatical subjects and subjects of predication, on the one hand, and between verb phrases and syntactic predicates, on the other hand. As discussed in the preceding chapter, in some languages (e.g. Turkish) the grammatical subject may be VP-internal. This means that in these languages the grammatical subject may occupy a syntactic position where it cannot c-command the VP. Besides, as the following example illustrates, the subject and the predicate need not be the grammatical subject and the VP of the matrix sentence, either:

(374) John made *Mary mad*

In this example, a predicational relation holds between the two italicised constituents, which *Mary* being the subject and *mad* being the predicate.

**Aristotelean vs. Fregean views of propositions:**

As for the question of whether propositions are divided into a subject and a predicate, the traditional (or Aristotelean) logic and the modern (or Fregean) logic contrast with each other with respect to the answer they have given to this question. Philosophers and logicians working in the Aristotelean tradition almost took it for granted that a proposition is formed by predicating a predicate of a subject. The

modern logic, on the other hand, has adopted a rather negative attitude towards the idea that propositions have such a binomial structure. Almost all logicians after Frege have rejected the notion of 'logical subject' and have argued that none of the arguments of a proposition differ from the others by performing such a role. The structure the Fregean tradition assigns to propositions is that of a mathematical function: a predicate or functor plus a set of arguments.

Our standpoint with regard to the structure of propositions is that of the traditional logic. We consider a proposition to be a relation of predication between a logical subject and a logical predicate. We do not intend to offer an elaborate defence of this Aristotelean position here; nor do we think that we can do this. Nonetheless, in the next chapter we will try to show that splitting the proposition into a subject and a predicate allows for a straightforward explanation of many syntactic and semantic issues. Most crucially, we will argue that a certain relation of referential dependency holds between a logical subject and its predicate (where the predicate is referentially dependent on the subject), which cannot be captured by means of Fregean *predicate+argument* structures where none of the arguments is distinguished as the logical subject.

**Topics as subjects of predication:**

Another claim we will put forward in the next chapter will be that a sentence receives mainly two interpretations. One interpretation solely aims to decode the descriptive content of the sentence and it is insusceptible to discourse-pragmatic factors. The other interpretation, on the other hand, is discourse-pragmatically motivated; it aims to re-structure the content of the sentence yielded by the first interpretation so that it will be cohesively embedded in the textual and communicative environment of the utterance. At the level of semantics we consider the topic to correspond to the subject of the propositional structure which the sentence receives as a result of its discourse-pragmatic interpretation. As for the predicate of this structure, we take it to correspond to the *comment* of the sentence.

Notice that we did not need the notion of comment when explicating the textual and communicative functions of topics. This was because these two functions of topics serve to contextualise the sentence within a textual and communicative environment, respectively. An analysis of the topic from the point of view of these functions does not require one to take its relation to the rest of the sentence into consideration. As seen in the preceding sections, such an analysis is concerned with the relation of the topic to a sentence-external entity (in the discourse or the hearer's knowledge-store).

That is, the topic appears with its sentence-external facet. As for the predicational function of the topic, it has to do with its sentence-internal facet. Its *raison d'être* is the relation of predication which the topic enters with a predicate. Therefore, an analysis of the topic as a subject of predication will make it necessary to refer to the notion of comment, as the comment is what is predicated of the topic.

**Are there subjectless propositions?**

Some philosophers have adopted a blend of the traditional and modern approaches to the structure of propositions. For example, unlike Frege, Brentano and Marty did not sweep away the subject-predicate theory entirely and seemed to position themselves somewhere between the traditional and modern views of proposition. They divided propositions to two groups: *thetic propositions* (or *thetic judgments*) and *categorical propositions* (or *categorical judgments*). According to them, while the former group of propositions were subjectless, like Fregean propositions, the latter group of propositions had subject-predicate structures, like Aristotelean propositions. The following quote from Kuroda (1972) expresses the gist of the theory of judgment of Brentano and Marty:

> This theory assumes, unlike either traditional or modern logic, that there are two different fundamental types of judgments, the categorical and the thetic. Of these, only the former conforms to the traditional paradigm of subject-predicate, while the latter represents simply the recognition or rejection of material of a judgment. Moreover, the categorical judgment is assumed to consist of two separate acts, one, the act of recognition of that which is to be made of the subject, and the other, the act of affirming or denying what is expressed by the predicate about the subject.

Consider sentence (375):

(375) Fido is barking.

This sentence could be interpreted as a categorical proposition, where *Fido* is the logical subject and *is barking* is the logical predicate. That is, it could be assigned a reading where Fido stands as an entity about which a statement is made. For instance, such a reading would arise when the sentence is uttered as an answer to a query like (376) (i.e. when it is made explicit that the entity evoked by the grammatical subject is the topic of the statement):

(376) What about Fido? What is it doing in the garden?

The same sentence could also be interpreted in a way that corresponds to a thetic judgment. When uttered as an answer to a question like:

(377) What is that noise? What is happening?

it would be interpreted as stating that a barking is taking place and the source of the barking is Fido. This interpretation captures, more or less, what would be considered a "subjectless statement".

However, we disagree with Brentano and Marty (and their followers) about the idea that thetic statements are subjectless propositions. Take, for instance, the thetic reading of sentence (375). There is a discourse entity the utterance producing this reading takes as its subject matter. It is directly about it. This is the noisy situation that is located in the immediate environment. Thus, it seems reasonable to consider the reading in question as a proposition whose subject is the situation referred to.

We argue that the structuring of thetic statements need not be considered as deviating from the formation of propositions as a subject-predicate relation. We can treat all sorts of statements as a predicational relation between a (logical) subject and a (logical) predicate in a uniform way. In our view, so-called thetic statements differ from so-called categorical statements only in that the former have a situation as a subject while the latter have an individual (i.e an object or a kind) as a subject. In fact, this point is inherently present in some characterisations of thetic and categorical judgments. For example, Dahl (1974) points out that thetic statements "describe a situation rather than attribute properties to individuals" (p.12). So, why not to assume that a thetic statement is about the situation it describes? The logical subject of a thetic statement can quite reasonably be taken to be the situation described by it.

## 5.4 The topic-comment articulation of Turkish sentences

### 5.4.1 Syntactic issues

**Topics must occur S-externally:**

Topics are background elements. Therefore, we should expect them to be subject to the syntactic constraints imposed on background elements in general. As discussed in the preceding chapter, in Turkish if a background element appears within the S it must be placed between the focus and the verb or it can be the verb itself. This means that if the whole S (of the matrix clause) is focal the background elements must all occur S-externally. The examples in (378) and (379) show that topics, like all background elements, must obey this constraint:[11]

(378) Ban-a balina-lar-ı anlatsana.
I-dat whale-pl-acc tell
'Tell me about whales.'

a. Balina-lar [$_S$ OKYANUS-LAR-DA yaşa-r].
whale-pl ocean-pl-loc live-aor
'Whales live in oceans.'

b. [$_S$ OKYANUS-LAR-DA yaşa-r] balina-lar.

c. *[$_S$ OKYANUS-LAR-DA balina-lar yaşa-r].

(379) Oya-dan NE haber? O NE yap-tı?
Oya-abl what news she what do-pst
'What about Oya? What did she do?'

a. Oya [$_S$ BULAŞIKLAR-I yıka-dı].
Oya dirty.dishes-acc wash-pst
'Oya washed the dishes.'

b. [$_S$ BULAŞIKLAR-I yıka-dı] Oya.

c. *[$_S$ BULAŞIKLAR-I Oya yıka-dı].

In these examples, *balina-lar* 'whales' and *Oya* are the topics of the given dialogues. Both of them are restricted to an S-external position under the E.

Interestingly, topics differ from non-topical background elements in that they are not allowed to appear even in an S-internal position situated between the focus and the verb. The examples below illustrate this fact:

(380) Oya-dan NE haber?
Oya-abl what news

[11] It should be recalled in Turkish the left and right boundaries of the S are delimited, respectively, by the leftmost constituent of the focus and the verb (cf. 4.2.4).

O-nu KIM ara-dı? / *KIM o-nu ara-dı?
she-acc who call-pst who she-acc call-pst

'What about Oya? Who called her?'

a. Oya-yı [$_S$ KAYA ara-dı].
Oya-acc Kaya call-pst
'Kaya called Oya.'

b. *[$_S$ KAYA Oya-yı ara-dı].

(381) Kaya-dan NE haber?
Kaya-abl what news

O NE zaman Oya-yı ara-dı? / *NE zaman o Oya-yı ara-dı?
he what time Oya-acc call-pst what time he Oya-acc call-pst

'What about Kaya? When did he call Oya?'

a. Kaya [$_S$ DÜN Oya-yı ara-sı].
Kaya yesterday Oya-acc call-pst
'Kaya called Oya yesterday.'

b. *[$_S$ DÜN Kaya Oya-yı ara-sı].

If these dialogues did not start with a topic-establishing expression, the * marked sentences would not be judged as unacceptable:

(382) KIM Oya-yı ara-dı?
who she-acc call-pst
'Who called Oya?'

[$_S$ KAYA Oya-yı ara-dı].
Kaya Oya-acc call-pst

'Kaya called Oya.'

(383) NE zaman Kaya Oya-yı ara-dı?
what time Kaya Oya-acc call-pst
'When did Kaya call Oya?'

[$_S$ DÜN Kaya Oya-yı ara-dı?]
yesterday Kaya Oya-acc call-pst

'Kaya called Oya yesterday.'

The conclusion that follows from the discussion up to this point is this:

(384) In Turkish, topics must be left- or right-detached to an S-external position.

This principle can be regarded as a manifestation of the c-command restriction on predication. As stated in Section 5.3.4, a subject of predication must occur in a syntactic position where it can c-command its predicate. Since the topic-comment articulation is a predicational relation, it is subject to this constraint. That is to say, the topic must c-command the comment. It can do this only in a sentence-initial or postverbal S-external position, but not in an S-internal position between the focus and the verb.

In fact, the principle stated in (384) is too coarse to capture the syntactic behaviour of all topics in Turkish. A particular case which (384) will be unable to handle is the case of contrastive topics:

**Contrastive topics are barred from postverbal positions:**

In Turkish, all topics are required to occur S-externally, but not all of them are allowed to appear after the verb. For example, contrastive topics can only be left-detached to a sentence-initial position.

Turkish has several particles for marking contrastive topics. In many cases, the particle *ya* is used to signal contrastive topics in questions, and the particles *ise* and *dA* are employed to mark contrastive topics in declarative sentences.[12] Both contrastive topics in questions and those in declarative sentences are required to precede the elements constituting the comment. That is, they cannot be right-detached to postverbal positions. This fact is illustrated by the following examples, where the sentences in (386) and (388) are assumed to be uttered as answers to the questions in (385) and (387), respectively:[13]

(385) a. Ya [$_{CT}$ Ayşe ile Oya] NE yap-tı?
CTM Ayşe and Oya what do-pst
'What about Oya and Ayşe (in contrast to the others)? What did they do?'

[12]The latter two particles can also be used to mark the contrastive topic of a yes-no question (cf. example (395)).

[13]CT stands for 'Contrastive-Topic' and CTM for 'Contrastive-Topic-Marker'.

b. *NE yap-tı ya [$_{CT}$ Ayşe ile Oya]?

(386) a. [$_{CT}$ Ayşe] BULAŞIKLAR-I yıka-dı.
Ayşe dirty.dishes-acc wash-pst

[$_{CT}$ Oya] ise/da DÖŞEME-YI sil-di.
Oya CTM floor-acc mop-pst

'Ayşe did the dishes. As for Oya, she mopped the floor.'

b. [$_{CT}$ Ayşe] BULAŞIKLAR-I yıka-dı.

*DÖŞEME-YI sildi [$_{CT}$ Oya] ise/da.

c. *BULAŞIKLAR-I yıka-dı [$_{CT}$ Ayşe].

[$_{CT}$ Oya] ise/da DÖŞEME-YI sildi.

(387) a. Ya [$_{CT}$ Oya ile Ayşe-yi] KIM sev-iyor?
CTM Oya and Ayşe-acc who love-prog

'What about Oya and Ayşe (in contrast to the others)? Who loves them?

b. *KIM sev-iyor ya [$_{CT}$ Oya ile Ayşe-yi]?

(388) a. [$_{CT}$ Oya-yı] KAYA sev-iyor.
Oya-acc Kaya love-prog

[$_{CT}$ Ayşe-yı] ise/de MURAT sev-iyor.
Ayşe-acc CTM Murat love-prog

'Kaya loves Oya. As for Ayşe, Murat loves her.'

b. [$_{CT}$ Oya-yı] KAYA sev-iyor.

* MURAT [$_{CT}$ sev-iyor Ayşe-yi] ise/de.

c. * KAYA sev-iyor [$_{CT}$ Oya-yı.

[$_{CT}$ Ayşe-yı] ise/de MURAT sev-iyor.

These examples provide strong evidence that contrastive topics in Turkish are obliged to occur in a sentence-initial position, preceding their comments. Further, we see that this restriction is independent of the grammatical roles of contrastive topics: the topics in (385) and (386) play the role of grammatical subject, while those in (387) and (388) are grammatical objects.

The particles *ya*, *ise* or *dA* are not the only tools for establishing topic-contrast. This may be achieved by using some adversative conjunctions, such as *fakat* 'but'

or even without using any inherently contrastive expression. In both cases, topics are still restricted to a sentence initial position preceding the comment. (389) and (390) exemplify these two cases, respectively:

(389) Çay takım-ı nerede?
tea set-poss3 where
'Where is the tea set?'

a. [$_{CT}$ Çaydanlık] MASA-NIN üst-ü-nde
teapot table-gen above-poss3-loc

fakat [$_{CT}$ şekerlig̃-i] DOLAB-A koy-dum.
but sugar.bowl-acc cupboard-dat put-pst-1sg

'The teapot is on the table but the sugar bowl I put in the cupboard.'

b. [$_{CT}$ Çaydanlık] MASA-NIN üst-ü-nde fakat

*DOLAB-A koy-dum [$_{CT}$ şekerlig̃-i].

c. *MASA-NIN üst-ü-nde [$_{CT}$ Çaydanlık]

fakat [$_{CT}$ şekerlig̃-i] DOLAB-A koy-du-m.

(390) Çocuk-lar NEREDE?
child-pl where
'Where are the children?'

a. [$_{CT}$ Oya] DERS çalış-ıyor.
Oya lesson study

[$_{CT}$ Kaya] UYU-YOR.
Kaya sleep-prog

'Oya is studying. Kaya is sleeping.'

b. [$_{CT}$ Oya] DERS çalış-ıyor.

* UYU-YOR [$_{CT}$ Kaya].

c. *DERS çalış-ıyor [$_{CT}$ Oya].

[$_{CT}$ Kaya] UYU-YOR.

All these examples show that contrastive topics must occur at the beginning of the sentence, preceding the comment.

**All newly established topics must precede their comments:**

In Turkish, only already established topics are permitted to appear after their comments by occupying a postverbal position. For instance,

(391) ON milyon civarında insan yaşı-yor [$_T$ Istanbul-da].
ten million around human.being live-prog Istanbul-loc
'Around ten million people live in Istanbul.'

can be felicitously uttered only in a context where *Istanbul* has already been set up as the topic of the discourse, e.g. as a reply to a request like:

(392) Ban-a Istanbul-u anlatsana.
I-dat Istanbul-acc tell
'Tell me about Istanbul.'

If the topic is a new one (i.e. one that has not been established by the preceding discourse), the topic NP must appear sentence-initially. For example, if the topic is a derived one, it will be a new topic (or a new sub-topic) and it will not be allowed to appear postverbally:

(393) [$_T$ Turkiye-nin metropol-ler-i] hızlı nüfus artış-ı
Turkey-gen3 metropolis-pl-poss3 fast population increase-poss3
sorun-u-yla karşı karşıya.
problem-poss3-com face.to.face
'Turkish metropolises are facing a problem of sharp increase in population.'

a. [$_T$ Istanbul-da] ON milyon civarında insan yaşı-yor...
Istanbul-loc ten million human.being live-prog
'Around ten million people live in Istanbul.'

b. *ON milyon civarında insan yaşı-yor [$_T$ Istanbul-da].

In fact, the obligatory sentence-initial occurrence of contrastive topics seems to be another manifestation of the restriction of new topics to the sentence-initial position. All contrastive topics can be regarded as special instances of newly established topics. For instance, the question in (385) can be used as part of a coherent dialogue only if the topic of the preceding utterance is different from its topic. This is, of course, due to the fact that only two different things can be contrasted. The following dialogues are assumed to take place between A and B, who are two hypothetical discourse participants:

(394) a. A. [$_T$ Kaya] KAPI-YI onar-dı.
Kaya door-acc mend-pst
'Kaya mended the door.'

B. Ya [$_{CT}$ Ayşe ile Oya] NE yap-tı?
CTM Ayşe and Oya what do-pst
'What about Oya and Ayşe (in contrast to Kaya)? What did they do?'

b. A. [$_{T}$ Ayşe ile Oya] çok iş yap-tı?
Ayşe and Oya a.lot.of work do-pst
'Ayşe and Oya did a lot of work.'

B. *Ya [$_{CT}$ Ayşe ile Oya] NE yap-tı?
CTM Ayşe and Oya what do-pst

We should also note that restricting a contrastive topic to a position before the comment has nothing to do with the sentence-initialness of the constituent which it is contrasted with. This means that the restriction in question is not due to a requirement of structural parallelism between the contrasted sentences. The example in (395) illustrates this fact:

(395) A. [$_{CT}$ Bulaşıklar-ı] da OYA mı yıka-dı?
dirty.dishes-acc CTM Oya Q wash-pst
'As for the dishes, was it Oya who washed them?'

a. B. (Hayır,) [$_{CT}$ bulaşıklar-ı] AYŞE yıka-dı.
(no) dirty.dishes-acc Ayşe wash-pst
'(No,) it was Ayşe who washed the dishes.'

[$_{CT}$ Oya] da DÖŞEME-YI sil-di.
Oya CTM floor-acc mop-pst
'As for Oya, she mopped the floor.'

b. B. (Hayır,) [$_{CT}$ bulaşıklar-ı] AYŞE yıka-dı.

*Döşeme-yi sil-di [$_{CT}$ Oya] da.

The constituent which the topic of B's second sentence is contrasted with is a non-sentence-initial focal element in the first sentence. Yet, the contrastive topic is restricted to the sentence-initial position.

In conclusion, we can refine the principle stated in (384) as follows:

(396) *Syntactic Position of Topics in Turkish:*

a. In Turkish, all topics are S-external, and

b. new topics are sentence-initial.

### 5.4.2 Prosodic issues

**A special pitch accent for topics:**

The topic and comment of a Turkish sentence are delimited by an intonational boundary. We already know that one of the elements within the comment, a focal element, is obligatorily associated with an A accent (i.e. a H* accent). Within the phonological repertoire of Turkish there is also an accent specific to topics. This is a complex fall-rise pitch accent (L+H*) (i.e. a B accent). We will not offer an elaborate analysis of the use of the B accent in Turkish. We will confine ourselves to two superficial observations on the use of this accent:

1. In contrast to the A accent, the realisation of a sentence element with a B accent is optional.

2. The B accent can be placed only on a preverbal topic. (A postverbal topic is realised with a level tone).

The example in (397) illustrates these two facts. Henceforth, an element associated with a topic related pitch accent will be written in boldface:

(397) Kaya-dan NE haber? O NEREYE git-ti?
Kaya-abl what news he where go-pst
'What about Kaya? Where did he go?'

a. [$_T$ **Kaya**] LONDRA-YA git-ti.
Kaya London-dat go-pst
'Kaya went to London.'

b. [$_T$ Kaya] LONDRA-YA git-ti.

c. LONDRA-YA git-ti [$_T$ Kaya].

d. *LONDRA-YA git-ti [$_T$ **Kaya**].

As shown in (a) and (b), a preverbal topic can be realised with or without a B accent. A postverbal topic, on the other hand, cannot receive any sort of accent (including the B one). For this reason, (397d) is unacceptable.

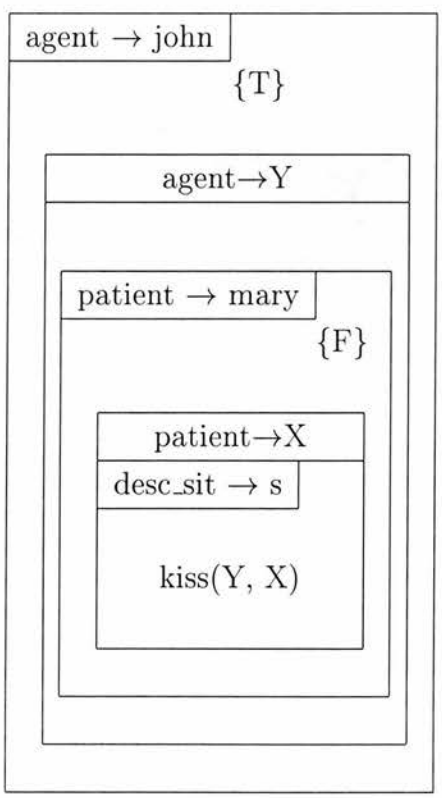
## 5.5 A situation-theoretic representation for topic-comment structures

As in the case of focus-background, the process determining the topic-comment partitioning of the proposition will be carried out via the *abstraction* and *predication* operations. The first operation will be to abstract over the constituent denoted by the topic. The resulting abstract will be the comment. Then, this abstract will be predicated of a T-labelled assignment which assigns the topic constituent to an index which is the same as the one used for the parameter abstracted in the first operation. The resulting object will be a structured proposition, partitioned into a topic and a comment. To give an example, ignoring the restrictions associated with the interpretation and assuming that the focus-background partitioning takes place before the partitioning of the proposition into a topic and a comment, the structured proposition corresponding to (398a) will be as in (398b):

(398) What about John? Who did he kiss?

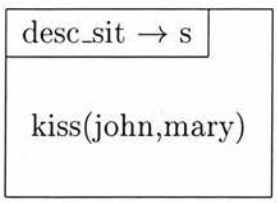
a. $[_T$ John] kissed $[_F$ Mary].

b.



This structured (Russellian) proposition is equivalent (but not identical) to the following non-structured (Austinian) proposition:

(399)




## 5.6 Summary

We started this chapter with an intuitive characterisation of the notion of topic. Then, we provided evidence from a range of languages showing that topics display distinguishing properties almost at every linguistic level. We, therefore, concluded that a complete informational analysis of sentences cannot be given without a notion of topic. Afterwards, we looked at different functions performed by topics. The general claim was that topics are invested with three functions: *textual, communicative* and *predicational.* The first two constitute the sentence-external facet of the topic, while the third has to do with the sentence-internal facet of the topic and its analysis requires the complementary notion of *comment.* Later on, we provided a topic-comment analysis of Turkish sentences. We showed that topics in Turkish must be left- or right-detached, while new ones are restricted to the left-peripheral position. Finally, we offered a proposal with regard to how to represent topic-comment structures in EKN.

# Chapter 6

# The Semantics of the Subject-Predicate Relation and the Structuring of Two Layers of Interpretation

In this chapter, we have two general objectives. First, we aim to provide a semantic analysis of the subject-predicate relation. Our specific claim is that a logical subject must be strong and referentially independent of its predicate. Second, we aim to show that the sentence structurally manifests the distinction between its semantic and pragmatic interpretations (Section 6.2) and that this fact can be exploited in order to give a plausible account of many facts in Turkish (Section 6.3).

## 6.1 Semantic constraints on the subject-predicate relation

### 6.1.1 Strongness requirement on logical subjects

In Section 2.5.1, we pointed out that individual-level predicates allow only a generic reading for bare plurals that co-occur with them. This was the reason for the unacceptability of the *there*-sentences in example (95), which is repeated below as (400):

(400) a. *There are carrots *nutritious*.

b. *There are chili peppers *spicy*.

c. *There are pumpkins *heavy*.

The predicates *nutritious*, *spicy*, and *heavy* are all individual-level. Because of that, *carrots*, *chili peppers*, and *pumpkins* are confined to generic readings. As generic readings are not allowed in *there*-insertion contexts, all these sentences are unacceptable.

In order to account for similar examples, Milsark (1977) puts forward a more general constraint:

(401) Individual-level predicates may only be predicated of strong NPs.[1]

In this section, we will try to show that predication in the Aristotelean sense (i.e. as a relation between a logical subject and a logical predicate) is subject to an even more general constraint:

(402) Subjects of predication must receive strong readings.

As will be remembered from Chapter 2, we take strong readings to include definite, partitive-indefinite, epistemically specific and strongly quantified interpretations.

**Topics:**

We will start to discuss this constraint with topics. Topics constitute a certain class of subjects of predication (namely, those invested with discourse-pragmatic functions, cf. Chapter 5). Therefore, one should expect them to be confined to strong interpretations. The examples we will look at below seem to support this expectation. Consider first sentence (403):

(403) Whales live in oceans.

When interpreted out of the blue, the bare plurals in this sentence are ambiguous between a generic (i.e. kind-referring) reading and an existential one. But once they have been contextually specified as topics, they become restricted to a generic

[1]Milsark (1977) refers to individual-level predicates as properties.

reading. For instance, when this sentence is uttered as a response to a sentence like 'Tell me about whales', the generic reading will be the only available reading for *whales*, and when it is uttered as a response to 'Tell me about oceans', this time oceans will be confined to the generic reading. The suggestion we derive from this example is that a topic cannot be assigned a weak existential interpretation.

The same observation holds also for Turkish data. Consider the example below:

(404) a. Ban-a köpeğ-i anlatsana.
I-dat dog-acc tell
'Tell me about the dog.'

b. Köpek havla-r.
dog bark-aor
'The dog barks.'

or

'There is/are a dog/dogs barking.'

When sentence (404b) is interpreted in isolation, the nominal *köpek* 'dog' is three-way ambiguous: it can be interpreted as kind-referring, object-referring definite, or existential.[2] But, if this sentence is placed in a context where it is preceded by the topic-establishing expression in (404a), the existential reading becomes unavailable for the nominal in question.

Consider now the following pair of utterances:[3]

(405) a. **Bir öğrenci** GEL-DI.
one student arrive-pst
'**A student**'s ARRIVED.'

b. Bir ÖĞRENCI gel-di.
one student arrive-pst
'A STUDENT's arrived.'

In (a), *bir öğrenci* is realised with a B accent. This means that it is prosodically marked as the topic of the utterance. What concerns us about this NP is that

[2]This latter reading, as hinted in the translation, is an incorporated one. A Turkish nominal without a determiner may, in principle, be ambiguous between an incorporated one and a definite one. As the given example illustrates, the definite reading may further display a kind-reference vs. object-reference ambiguity. (See Section 7.3.4 for a discussion of definiteness marking in Turkish.)

[3]Recall that elements that appear in boldface and small caps are intended to be those that are associated with a B accent and an A accent, respectively.

it can receive either a partitive or an epistemically specific reading. That is, we can interpret (a) as meaning that one of the students has arrived or that a certain student has arrived. The reading not available for this utterance is the one where the subject is assigned an existential interpretation: the set of students who have arrived is non-empty. This latter reading is available only for (b), where the subject is not topical. For instance, when these two utterances are negated, only the one corresponding to (b) can be interpreted as meaning that the set of students who have arrived is empty. In (a), the subject is associated with an existential presupposition that is preserved under negation.[4] In other words, of the two utterances in (406), only the (b) one can be understood with wide scope negation represented in (407b). In (406a), it is possible to interpret the negative element only with narrow scope, as in (407a):

(406) a. **Bir öğrenci** GEL-ME-DI.
one student arrive-neg-pst
'**A student** didn't arrive.'

b. Bir ÖĞRENCI gel-me-di.
one student arrive-neg-pst
'A STUDENT didn't arrive.'

(407) a. $\exists x[student(x) \wedge \neg arrive(x)]$

b. $\neg\exists x[student(x) \wedge arrive(x)]$

The restriction of topical NPs to strong readings is also observed in other languages. Below are some examples showing that this restriction holds for Korean and German topics, too.

Korean does not explicitly mark definiteness of an NP and does not have a definite article. Therefore, an NP can be definite or indefinite depending on the context. What is of particular interest for us is that a topical NP always excludes a weak indefinite reading. Choi (1995) gives the following examples to illustrate this fact:[5]

(408) a. kay-nun yengliha-ta.
dog-top smart-dcl
'[$_T$ Dogs] are smart.'

b. haksayng twu myeng-un toksin-i-ta.
student two cl(person)-top single-be-dcl

[4]Recall that all strong readings are presuppositional (cf. Section 2.5.2).
[5]Remember that [$_T$ ... ] delineates a topical constituent.

'[$_T$ Two of the students] are single.'

'[$_T$ The two students] are single.'

Recall that *nun/un* is a topic marker in Korean. According to Choi, the *nun*-phrase in (408a) receives a generic reading and the one in (408b) either means 'two of the students' or 'the two students'.

Consider now the pairs of German sentences in (409) and (410) (from Jäger 1995):

(409) a. Peter liest oft Bücher.
Peter reads often books
'Peter often reads books.'

b. Peter liest Bücher oft.
Peter reads books often
'As for books, Peter reads them many times.'

(410) a. Peter hat oft ein Buch gelesen.
Peter has often a book read
'Peter often read a book.'

b. Peter hat ein Buch oft gelesen.
Peter has a book often read
'Peter read a (certain) book many times.'

Jäger (1995) argues that the NPs *Bücher* 'books' in (409a) and *ein Buch* 'a book' in (410a) are interpreted existentially, while the same NPs in (409b) and (410b) receive respectively a generic reading and an epistemically specific reading. What brings about these differences in interpretation is the fact that these NPs fall to the left of *oft* 'often' in the (a) sentences and to the right of this adverb in the (b) sentences. Usually the adverb *oft* 'often' is taken to mark the VP-boundary in German sentences.[6] It is a frequently recognised fact that the surface position

[6]The underlying syntactic structures of the sentences in (409) and (410) are like the following:

(411) a. Peter oft [$_{VP}$ Bücher liest].
Peter often books reads

b. Peter Bücher$_i$ oft [$_{VP}$ e$_i$ liest].
Peter books often reads

(412) a. Peter oft [$_{VP}$ ein Buch gelesen hat].
Peter often a book read has

b. Peter ein Buch$_i$ oft [$_{VP}$ e$_i$ gelesen hat].
Peter a book often read has

of objects in German influences interpretation (cf. Kratzer 1989, Diesing 1992, de Hoop 1992, Meinunger 1993, Büring 1994, inter alia). According to Jäger, the strong reading of a VP-external object should not be characterised as the result of a direct link between syntax and semantics, but it should rather be considered from the point of view of information structuring. He maintains that the object NPs in (409b) and (410b) occur in the VP-external positions just because they are topics: they refer to a discourse entity that is under debate. Though he does not offer a semantic characterisation of the weak/strong distinction, he takes generic and (epistemically) specific readings to be strong and existential ones to be weak. Then, he argues that "the strongness of an indefinite [NP] is just a consequence of its topichood" (p. 22).

**Non-topical logical subjects:**

In fact, the strongness constraint seems to apply to all kinds of all logical subjects, irrespective of whether they have a discourse-pragmatic topical role or not. Below, we will try to substantiate this claim relying on Turkish data.

As will be remembered from Section 4.2.4, Turkish sentences may have VP-internal grammatical subjects. For this reason, the core structure of a Turkish sentence cannot always be based on a grammatical subject-VP dichotomy. The (a) and (b) sentences are both acceptable in the following discourse-context:

(413) Ben yok iken NE-LER ol-du?
I absent while what-pl happen-pst
'What happened when I was gone?'

a. [$_S$ Bir köpek [$_{VP}$ OYA-YI ısır-dı]].
one dog Oya-acc bite-pst
'A dog bit Oya.'

b. [$_S$ Oya-yı [$_{VP}$ bir KÖPEK ısır-dı]].
Oya-acc one dog bite-pst
'A dog bit Oya.'

Recall that the A accent falls on the leftmost complement in the VP in a wide-focus Turkish sentence (cf. Section 4.2.4). Given this fact, the VP-externalised complement is the grammatical subject in (413a) and it is the object NP in (413b). What is of particular interest for us is that the two response sentences are not

The displacement of the verbs to a VP-external position is due to so-called V2-effects, which do not have relevance to our discussion.

interpretively equivalent, though they are both fine in the given context. The VP-external subject of (a) receives either a partitive or certain kind of epistemically specific interpretation. That is, it means either one of the dogs or a specific dog. However, neither of these readings is available for the VP-internal subject of (b). The grammatical subject of the (b) sentence is confined to a weak existential reading. The interpretation necessarily yielded by this sentence might be paraphrased as: Oya happened to be the victim of a biting event where there was a (non-specific) dog that acted as the doer of the action. We will discuss the semantics of grammatical subjects in Section 6.3.1. For the time being, we will only concentrate on the interpretation of VP-external constituents.

The first thing we should note is that the indicated interpretation of the subject of (413a) is not because of a topical function assigned to this NP by the pragmatic context of utterance. The question to which the sentence is intended to be an answer does not pick out any constituent of the sentence as the topic. As information is requested about a certain place and a certain time period covering the absence of the person requesting this information in that place, the topic should rather be considered to be a spatiotemporal location. The non-topical character of the subject of the (a) sentence is also manifest by its prosodic behaviours. As argued in the preceding chapter, provided that it is not postverbal, the topic of a Turkish sentence can be realised with a B accent. If, therefore, the subject of (a) were the topic, it would be expected to be able to receive this accent. But, this is certainly not the case. The utterance

(414) **Bir köpek** OYA-YI ISIR-DI.
one dog Oya-acc bite-pst
'**A dog** bit OYA.'

will be totally inappropriate in the context established in (413). The same utterance will be appropriate, for instance, as a reply to a query like 'What about the dogs? Did they behave properly?', where the subject NP will receive a partitive interpretation.

In contrast to the VP-internal subject of (413b), the VP-external subject of (413a) can c-command the VP of its sentence. Therefore, it is plausible to consider this latter subject to function as a subject of predication, where the predicate is encoded by the VP. We argue that the strongness of this NP is a direct consequence of its functioning as a logical subject. We assume that there is a one-to-one correspondence between syntactic predications and logico-semantic subject-predicate

relations in Turkish. That is, every syntactically defined predicational relation has a logico-semantic import. Let us see two more examples that illustrate the specificity constraint on VP-external indefinite subjects. Consider (415) and (416):

(415) Ben yok iken NE-LER ol-du?
I absent while what-pl happen-pst
'What happened when I was gone?'

a. ??[$_S$ Bir arı [$_{VP}$ OYA-YI ısır-dı]].

b. [$_S$ Oya-yı [$_{VP}$ bir ARI ısır-dı]].
Oya-acc one bee bite-pst
'A bee stung Oya.'

(416) O ses NE-YDI? NE ol-du?
that sound what-pst what happen-pst
'What was that sound? What happened?'

a. ??[$_S$ Bir elma [$_{VP}$ AĞAÇ-TAN düş-tü]].

b. [$_S$ Ağaç-tan [$_{VP}$ bir ELMA düş-tü]].
tree-abl one apple fall-pst
'An apple fell from the tree.'

If there is no contextually salient set of bees or apples within the given discourses, only the (b) sentences of these examples yield entirely fine interpretations. The (a) sentences sound considerably odd. Given the constraint that a VP-external indefinite subject must be either partitive or epistemically specific, the explanation for this oddity seems quite straightforward. It would be very bizarre for a human agent thinking about an event where a bee had stung someone to fix the bee as a particular individual and to consider the event as significant by virtue of the fact that it was an act of that particular bee. However, it is exactly such an interpretation that the structure of (415a) would lead one to. The grammatical subject of the sentence (i.e. 'bir arı' *a bee*) occupies a logical subject position and it is not partitive. Thus, it is obliged to receive an epistemically specific interpretation. An entirely parallel reasoning also applies to (416a).

Below are two other examples that illustrate the correlation between strong interpretations and subjects of predication in a more clear-cut way:

(417) Ben yok iken birşey OL-DU mu?
I absent while anything happen-pst Q
'Did anything happen while I was gone?'

a. [$_S$ Köpek [$_{VP}$ OYA-YI ısır-dı]].
dog Oya-acc bite-pst
'The dog bit Oya.'

b. [$_S$ Oya-yı [$_{VP}$ KÖPEK ısır-dı]].
Oya-acc dog bite-pst
'A dog/dogs bit Oya.' (or 'Oya was dog-bitten.')

c. *__Köpek__ OYA-YI ısır-dı.
dog Oya-acc bite-pst
'__The dog__ bit Oya.'

(418) O ses NE-YDI? NE ol-du?
that sound what-pst what happen-pst
'What was that sound? What happened?'

a. [$_S$ Taş [$_{VP}$ SU-YA düş-tü]].
stone water-dat fall-pst
'The stone fell into (the) water.'

b. [$_S$ Su-ya [$_{VP}$ TAŞ düş-tü]].
water-dat stone fall-pst
'A stone/stones fell into the water.'

c. *__Taş__ SU-YA düş-tü.
stone water-dat fall-pst
'__The stone__ fell into (the) water.'

Although in Turkish a bare noun may, in principle, display an ambiguity between a definite reading and an incorporated one (cf. Section 7.3.4), the grammatical subjects of the (a) sentences above are, without a doubt, restricted to a definite reading. Given that the contexts are set up in such a way as to avoid imposing a topical role on any constituent of the sentences and that the (c) sentences, where the VP-external subject is realised with a B accent, are unacceptable, this restriction has certainly nothing to do with topichood. Again, what matters here seems to be the fact that the NPs in question function as subjects of predication. This makes it impossible for them to receive a weak incorporated reading. As the translations indicate, this latter reading is available for the VP-internal subjects of the (b) sentences, which do not enter a predicational relation with their VPs. (418) also provides evidence that suggests that the constraint under discussion (i.e. that subjects of predication must be strong) is indifferent to the grammatical roles of NPs. In (418a), the dative nominal *su-ya* 'water-dat' occurs VP-internally and it is ambiguous between a definite reading and an indefinite one. In (418b), on the other

hand, the same nominal appears VP-externally and it is forced to receive a definite interpretation.

We can acquire further evidence supporting the claim that subjects of predication must be strong by means of Turkish subordinate clauses. In Turkish, the grammatical subject of a nominalised clause, we argue, must carry the genitive suffix, *(-(n)In*, if it is VP-external and it does not carry any case morphology if it is VP-internal. The example below, where the person asking the question is assumed not to be aware of the biting event in question in any way, illustrates this fact:

(419) Kaya NE söyle-di.
Kaya what say-pst
'What did Kaya say?'

a. Kaya [$_S$ bir köpeḡ-in [$_{VP}$ OYA-YI ısır-dıḡ-ı-nı]] söyle-di.
Kaya one dog-gen3 Oya-acc bite-ger-poss3-acc say-pst
'Kaya said that a dog bit Oya.'

b. Kaya [$_S$ Oya-yı [$_{VP}$ bir KÖPEK ısır-dıḡ-ı-nı]] söyle-di.
Kaya Oya-acc one dog bite-ger-poss3-acc say-pst
'Kaya said that a dog bit Oya.'

c. *Kaya [$_S$ bir köpek [$_{VP}$ OYA-YI ısır-dıḡ-ı-nı]] söyle-di.

d. *Kaya [$_S$ Oya-yı [$_{VP}$ bir KÖPEḠ-IN ısır-dıḡ-ı-nı]] söyle-di.

Both (419c) and (419d) have problematic structures. The problem with (419c) is that the VP-external grammatical subject of the subordinate clause does not carry the genitive suffix. There is no possible discourse-context where this sentence can be felicitously uttered. The problem with (419d) is that a genitive-marked grammatical subject is assigned a VP-internal syntactic position. The intonational structure assigned to this sentence forces it to receive a reading with narrow focus on the genitive-marked subject, which can be paraphrased as: *Kaya said that it was a* DOG *that bit Oya.* As discussed in Chapter 4, an obligation for a such narrow-focus interpretation arises only when the A accent falls on a VP-external constituent. This means that on its solely available narrow-focus reading, the A-accented subject of sentence (417) occupies a VP-external syntactic position, which contradicts the given syntactic description of the sentence.

Consider the following examples:

(420) a. Oya *penguen-ler-in/penguen-in* Güney Kutbu-nda
Oya penguin-pl-gen3/penguin-gen3 South Pole-loc
yaşa-dığ-ı-nı söylü-yor.
live-ger-poss3-acc say-prog
'Oya says that *penguins/the penguin* (the kind penguin) live/lives in the South Pole.'

b. Oya Güney Kutbu-nda *penguen-ler/penguen* yaşa-dığ-ı-nı
Oya South Pole-loc penguin-pl/penguin live-ger-poss3-acc
söylü-yor.
say-prog
'Oya says that *penguins/the penguin* (the kind of penguin) live/lives in the South Pole.'

(421) a. Oya *kuş-lar-ın/kuş-un* dal-a kon-duğ-u-nu söylü-yor.
Oya bird-pl-gen3/bird-gen3 branch-dat land-ger-poss3-acc say-prog
'Oya says that *the birds/the bird* landed on the/a branch.'

b. Oya dal-a *kuş-lar/kuş* kon-duğ-u-nu söylü-yor.
Oya branch-dat bird-pl-gen3/bird-gen3 land-ger-poss3-acc say-prog
'Oya says that there were/was *birds/a bird* landed on the branch.'

The translations reflect the most preferred readings of the sentences in these examples. We will not go into other non-preferred readings the sentences could obtain. We will only note that the weak existential reading is categorically unavailable for the italicised genitive-marked subjects. In view of the fact that genitive-marked subjects are VP-external, this is compatible with our expectations.

The examples we have discussed up to this point strongly suggest that logical subjects, whether topical or non-topical, are constrained to receive strong interpretations. In the next section, we will examine another constraint that applies to subject-predicate relations.

### 6.1.2 The semantic autonomy of logical subjects

Keenan (1976), aiming to provide a universal definition of the notion of *subject*, presents a long list of properties which subjects characteristically possess in many different languages. These are a number of syntactic, pragmatic, and semantic properties. One of the semantic properties which Keenan includes in this list seems to us to be of the utmost importance for the semantic characterisation of the phenomenon of the subject-predicate relation. This is the property of *autonomous*

*reference*, which Keenan puts as follows:

(422) The reference of a subject cannot be made to depend on the reference of other NPs which follow it.

According to Keenan, (422) explains why "in English we could never say *He-self$_i$ admires John$_i$* for *John$_i$ admires himself*". This is because "in the first sentence the reference of the subject cannot be determined independently of that of a following NP, so the subject would not be autonomous in reference" (p. 313).

Keenan also argues that subjects have preferentially wider scope than non-subjects. Then, he adds:

> ... suppose we are given a sentence in some [language] containing the main verb *kiss* and two quantified NPs, *every man* and *a woman*. If the truth of the sentence most naturally allows that the choice of woman can vary with the choice of man, as in *every man kissed a woman*, then that is evidence that *every man* occurs as a subject. But if, on preference, the choice of woman must be made independently of that of the man, as in *a woman was kissed by every man*, then that is evidence that *a woman* is subject. (p. 319)

We should note that Keenan does not identify any combination of the subject properties (which he presents in his work) as both necessary and sufficient for an NP in any sentence in any language to be the subject of that sentence. We propose that the property of autonomous reference is a necessary condition on logical subjects. We express this constraint as follows:

(423) The Autonomous Subject Principle:

The semantic interpretation of a logical subject cannot be made to depend on the semantic interpretation of its predicate.

This constraint, we hypothesise, applies to grammatical subjects in a language to the extent that grammatical subjects tend to be realised also as logical subjects in that language.

Consider the following sentence:

(424) Every man loves a woman.

Clearly, this sentence is ambiguous between the two readings represented below:

(425) a. $\forall x[man(x) \rightarrow \exists y(woman(y) \wedge love(x,y))]$

b. $\exists y[woman(y) \wedge \forall x(man(x) \rightarrow love(x,y))]$

The scopal ambiguity of sentences like (424) stems from a well-known fact: in English, semantic representations cannot be directly read off surface structures of sentences. Within GB theory, for instance, a level of **Logical Form** (LF) is postulated which mediates between surface structures (or, more precisely, S-structures) and semantic representations. It is at this level that scopal relations are disambiguated. At this point, we would like to mention a particular proposal about the issue of scope in English, as the proposed idea bears relevance to what we argue in (423): Erteschik-Shir (1997) defines a grammatical level of f-structure (focus-structure) which is an annotated S-structure in which topic and focus constituents are marked. Furthermore, she proposes to replace the level of LF with that of f-structure. That is to say, in her account it is f-structure, not LF, that feeds the semantic component. F-structures are disambiguated with respect to scope. What is of particular interest for us is that this disambiguation must obey the following principle:

(426) Topic quantifiers take wide scope over any other quantifier,
where topics are characterised as subjects of predication.
(Erteschik-Shir, 1997)

The effect of this principle on the disambiguation of scopal relations can also be observed in Turkish. Consider example (427):

(427) a. [$_E$ **Bir kedi-yi** [$_S$ her KÖPEK kovala-dı]].
one cat-acc every dog chase-pst
'Every DOG chased **a cat**.'

b. $\exists y[cat(y) \wedge \forall x(dog(x) \rightarrow chase(x,y))]$

Here it is the NP which is associated with a topic-related pitch accent and syntactic position that has the wide scope. It is not possible to interpret *her köpek* 'every dog' with wide scope. That is, in the situation described by (427a) there is only one cat chased by every dog. For this reason, of the two sentences below only the (a) one would be a possible continuation of (427a) in a coherent bit of discourse:

(428) a. Daha sonra, köpek-ler-le *kovala-dık-lar-ı* *kedi* birlikte bir
later on dog-pl-com chase-part-pl-poss3 cat together one
su birikintisi-nin içinde oyna-dı-lar.
puddle in play-pst-pl
'Later on, the dogs and the cat they chased played together in a puddle.'

b. Daha sonra, köpek-ler-le *kovala-dık-lar-ı* *kedi-ler* birlikte bir
later on dog-pl-com chase-part-pl-poss3 cat-pl together one
su birikintisi-nin içinde oyna-dı-lar.
puddle in play-pst-pl
'Later on, the dogs and the cats they chased played together in a puddle.'

The utterance of the (b) sentence after (427a) would result in an incoherent fragment of discourse, as the italicized plural NP could not find its antecedent in the previous discourse. To give another example, someone uttering

(429) Köpek-ler-den hiçbiri-si kovala-dığ̃-ı kedi-nin diğer köpek-ler-in
dog-pl-abl none-poss3 chase-part-poss3 cat-gen3 other dog-pl-gen3
kovala-dığ̃-ı kedi-ler-den farklı ol-duğ̃-u-nu fark et-me-di.
chase-part-poss3 cat-pl-abl different be-ger-poss3 realize-neg-pst
'None of the dogs realized that the cat it chased was different from the cats chased by the other dogs.'

after (427a) would contradict himself, as this sentence entails that there is more than one cat chased by the dogs, which is in conflict with the wide scope reading obligatorily assigned to the object NP in (427a).

We should emphasize that the wide scope interpretation of the topical object in (427) is not a matter of preference. If this were the case, the utterance of (428b) or (429) after (427a) might cause this NP to be interpreted with narrow scope. However, we do not have this flexibility. Any sentence entailing the existence of more than one cat chased by the dogs would sound odd after (427a).

We should also note that either (428b) or (429) would be a perfect continuation of a sentence like:

(430) [$_E$ **Her köpek** [$_S$ bir KEDI-YI kovala-dı]].
every dog one cat-acc chase-pst
'**Every dog** chased a CAT.'

Here, the non-topical object NP can receive a narrow scope reading. Thus, the described situation can be one containing several cats.

In fact, any kind of logical subject seems to take scope over its predicate. Consider the following example, where the reported event (i.e. that a dog bit every child) is new to the person asking the question:

(431) Oya san-a NE söyle-di.
Oya you-dat what say-pst
'What did Oya say to you?'

a. Oya ban-a [$_S$ bir köpeğ-in [$_{VP}$ her ÇOCUĞ-U ısır-dığ-ı-nı]]
Oya I-dat one dog-gen3 every child-acc bite-ger-poss3-acc
söyle-di.
say-pst

b. Oya ban-a [$_S$ her çocuğ-u [$_{VP}$ bir KÖPEK ısır-dığ-ı-nı]]
Oya I-dat every child-acc one dog-gen3 bite-ger-poss3-acc
söyle-di.
say-pst
'Oya told me that a dog bit every child.'

The (a) and (b) sentences display a difference in interpretation that is not reflected by the provided translations. Unlike the English translations, both of these sentences are unambiguous with respect to the scopal relation between *bir köpek* 'a dog' and *her çocuk* 'every child'. The subordinate clauses of these sentences are respectively confined to the readings represented below:

(432) a. $\exists x[dog(x) \wedge \forall y(child(y) \rightarrow bite(x, y))]$

b. $\forall y[child(y) \rightarrow \exists x(dog(x) \wedge bite(x, y))]$

That is, in each case, the NP that serves as the logical subject takes scope over the NP that appears in the predicate.

These examples show that a logical subject, whether it is topical or not, takes scope over its predicate. This is an immediate consequence of the Autonomous Subject Principle: a logical subject within the scope of a predicational element would be referentially dependent on that element and thus it would not be semantically autonomous with respect to its predicate.

The Autonomous Subject Principle also seems to provide a promising perspective for a semantic approach to anaphoric relations. We saw in Section 4.2.3 that an anaphor cannot c-command its antecedent in a Turkish sentence. Below is another example of this fact:

(433) Kaya orada NE yap-ıyor?
Kaya there what do-prog
'What is Kaya doing over there?'

a. $[_E$ Kaya$_i$ $[_S$ Ali-ye$_j$ ayna-da $[_{VP}$ KENDI-NI$_{i/j}$ göster-iyor]]].
Kaya Ali-dat mirror-loc self-acc show-prog
'Kaya$_i$ is showing Ali$_j$ himself$_{i/j}$ in the mirror.'

b. $[_E$ Kaya$_i$ $[_S$ kendi-ni$_{i/*j}$ ayna-da $[_{VP}$ ALI-YE$_j$ göster-iyor]]].
Kaya self-acc mirror-loc Ali-dat show-prog
'Kaya$_i$ is showing Ali$_j$ himself$_{i/j}$ in the mirror.'

In (a), the reflexive can be coreferential with either the nominative or the dative. In (b), however, it can be coreferential only with the nominative. The dative NP in the (b) sentence is in a syntactic position where it is c-commanded by the reflexive. It is an element of a constituent that serves as a predicate of the reflexive NP. If it were assigned the task of providing the reference of this anaphor, this would violate the principle stated in (423). That is, in such a case, the semantic interpretation of a logical subject (namely the reflexive pronoun) would be dependent on the semantic interpretation of its predicate.

It seems that an account in terms of dependency relations between (logical) subjects and their predicates can also be given for anaphoric relations in English. We have already seen that Keenan (1976) explains the fact that English does not have a sentence like 'He-self$_i$ admires John$_i$' by exploiting exactly the same idea as the one expressed in this principle: in such a sentence "the reference of the subject cannot be determined independently of that of a following NP, so the subject would not be autonomous in reference" (p. 313). Another account of anaphoric relations based on the idea of autonomous reference is offered by Erteschik-Shir (1997). However, her account is not confined to grammatical subjects; rather, it is intended to apply to all sorts of subjects of predication. Consider the pairs of sentences in the following examples (from Erteschik-Shir 1997):

(434) a. John showed Mary$_i$ to herself$_i$.

b. *John showed herself$_i$ to Mary$_i$.

(435) a. John showed Mary$_i$ herself$_i$.

b. *John showed herself$_i$ Mary$_i$.

(436) a. John$_i$ showed himself$_i$ to Mary.

b. John$_i$ showed Mary to himself$_i$.

According to Erteschik-Shir, in a double object construction like those above a predicational relation holds between the two object NPs and the one adjacent to the verb serves as the subject of predication. Further, she argues that subjects (of predication) cannot be dependent for their reference on their predicates. It is this constraint that rules out (434b) and (435b). In each of these sentences, the reflexive is referentially dependent on an NP (namely, the second object NP) that functions as its predicate. In (436), both (a) and (b) sentences are licensed, because the direction of the dependency is not from a subject to a predicate, but the other way around.

To sum up, it seems that many apparently different semantic phenomena can be given a plausible explanation in terms of semantically characterised subject-predicate relations where subjects have to be referentially independent of their predicates.

## 6.2 The structuring of two layers of sentence interpretation: a hypothetical analysis

Thus far we have seen two different kinds of predicational relation between a (logical) subject and a predicate. One partitions the E projection into a topic and a comment, whereas the other is structured by the S projection as a relation between a (non-topical) logical subject and a logical predicate. In the preceding chapter we saw that the topic-comment articulation of the sentence is discourse-pragmatically motivated. This kind of predication serves to embed the utterance in a textual and communicative environment in a cohesive manner. A question naturally arises at this point as to the nature of S-internal predication. In the preceding section, we have seen that this is not a purely syntactic phenomenon; on the contrary, it is subject to crucial semantic constraints. In this section, we will propose an explanatory characterisation of S-internal predication with a non-topical (logical) subject. Unfortunately, due to lack of sufficiently concrete evidence our proposal will sometimes have a hypothetical flavour. Our aim is to establish a semantic ground on which we can offer a fairly plausible, but not conclusive, explanation of some linguistic facts.

We will start our discussion with Banfield's observations on interpretive differences between E and S.

### 6.2.1 Some interpretive differences between Es and Ss

Banfield (1982) argues that the S of indirect speech cannot preserve the communicative facet of the original utterance reported by means of it, whereas the E of direct speech can. This means that a linguistic expression that was used in the original utterance solely for the purpose of establishing a certain communicative relation between the speaker and the hearer can appear only in an E of direct speech but not in an S of indirect speech. Two such expressions are *addressee-oriented adverbials* and *vocative noun phrases*. We already saw in Chapter 4 that addressee-oriented adverbials are excluded from indirect (but not direct) speech, as illustrated in (437):

(437) a. John said, 'Between you and me, she is lying.'

b. John said that (*between him and her) she was lying.

The same restriction also applies to vocative NPs:[7]

(438) a. The private answered, 'Sir, I cannot carry out these orders.'

b. The private answered that (*sir) he couldn't carry out these orders.

Another difference which Banfield (1982) identifies between direct and indirect speech is that the former but not the latter can contain lexical items expressing the point of view or subjectivity of the speaker of the original utterance. Among such items are so-called 'qualitative nouns' or 'epithets', which are nouns with a figurative meaning expressive of the speaker's point of view in certain contexts. "That idiot of a doctor" and "a devil of an organizer" are two contexts where a qualitative noun (namely, *idiot* or *devil*) occurs. Banfield notes that when such nouns appear in indirect speech, they are referred to the quoting, not the quoted, speaker's point of view. It is for this reason that (439a) is not a contradiction, whereas (439b) is:

(439) a. John said that the idiot of a doctor was a genius.

b. John said, 'That idiot of a doctor is a genius.'

Evaluative adjectives such as *poor, damned, etc.*, Banfield points out, resemble nouns of quality in their possession of a figurative meaning expressive the speaker's point

[7]The examples in this section are adopted from Banfield (1982).

of view. "In [440a], *poor* describes the noun it modifies, but in [440b], it can be read as expressing the speaker's attitude toward the person so described. In the first case it is synonymous with *impecunious*; in the second, with *unfortunate*" (p. 55):

(440) a. Cinderella was (a) poor (girl).

b. The poor girl couldn't go to the ball.

According to Banfield, *poor* can be assigned an evaluative meaning in contexts such as after a definite article or when it appears alone with the noun in an exclamation, as in "Poor girl". It does not have this meaning in predicate adjective position or if modified by an indefinite article.

The point which Banfield wants to make with such adjectives is that when they occur in indirect speech, the attitude they express is ascribed to the speaker of the entire E and not to the quoted speaker. For instance, the syntax of (441) does not require one to assume that the quoted speaker actually used the word *poor*:

(441) The shop steward denied that the poor management representative had been unfairly treated.

"Such words might have been pronounced by the quoted speaker, but their appearance in indirect speech (without quotation marks) must mean that the quoting speaker so assented to the quoted speaker's opinions that he expressed similar ones" (p. 56). For this reason, (442) must be considered a contradiction:

(442) Though I think that the fortunate girl$_i$ would be here tomorrow, he said that poor Winifred$_i$ isn't due till Tuesday.

Resting on such observations, Banfield argues that the S of indirect speech is stripped of the communicative and subjective aspects of the utterance it is related to (which is an E) and is left only with its propositional content. Using the term 'expression' to mean exclusively the expression of subjectivity, she asserts that:

> Direct speech is at once expression and communication. On the other hand, thought, reported in the subordinate S of indirect speech, is always reduced to its [propositional] content; it is not only not communication, it is also nonexpressive. (1982:63)

To be more specific, by 'propositional content' Banfield means the truth-conditional interpretation of the sentence. That is, according to her, the function of S is to express the truth-conditional content of the utterance, whereas that of E is to deal with non-truth conditional aspects of interpretation entailing reference to the pragmatic context of utterance, such as the speaker's and the hearer's mental states.

### 6.2.2 Our position

We essentially accept Banfield's characterisation of interpretive differences between E and S. We agree that the S is responsible for expressing context-independent aspects of meaning, while discourse-pragmatic aspects of meaning are dealt with by the E projection. However, we do not equate the truth conditional content of a sentence with its propositional content. As stated in the preceding chapter, we view a proposition as a relation of predication between a logical subject and a logical predicate. A natural conclusion that follows from this view is that the propositional structure of a sentence can be changed without any effect on its truth conditional interpretation. For example, (443b) and (444b) are truth-conditionally equivalent, but they express different (Aristotelean) propositions:

(443) a. What about John? What did **he** do?

b. **John** ate the CAKE.

(444) a. What about the cake? What happened to **it**?

b. JOHN ate the **cake**.

Similarly, we argue that two Ss with the same truth-conditions but with different subject-predicate structures need to be considered to have different propositional contents. We have already seen that approaching the semantics of the S in terms of subject-predicate relations allows us to explain many linguistic facts in Turkish, such as those relating to scopal relations and anaphoricity.

We believe that the propositional interpretation of sentences can be approached from a more cognitive point of view. For example, Devlin (1990) argues that:

> Ontologically, propositions are uniformities across intentional mental states: a proposition is an abstract object in the public domain, that arises out of (or, if you prefer, is part of) a certain kind of mental state.

> (To adopt Searle's (1983) terminology, we would say that a proposition is the *intentional content* of a certain kind of mental state.) The most common means by which a proposition enters the public domain is by means of an assertive utterance of a declarative sentence. (p. 90)

We adopt Devlin's position with respect to the ontological status of propositions. That is, we take them to be parts (or contents) of mental states. As already stated, we consider the E and S projections to structure two distinct (albeit truth-conditionally equivalent) propositions. Therefore, according to us, an interpreter of a declarative sentence enters two distinct mental states which are characterised by the propositions encoded by the S and E of the sentence.[8] The S and E projections are respectively responsible for context-independent and context-dependent aspects of meaning. So, we can plausibly argue that the E projection of the sentence bears the imprint of the speaker's mental state that is directed at the pragmatic context of utterance, whereas the S projection reflects the content of the speaker's mental state that is solely concerned with the described situation neglecting the discourse-pragmatic requirements imposed on the utterance.

Or, to speak metaphorically, in our view every sentence makes two distinct pictures of one and the same situation (namely the described situation). The pictures differ from each other in terms of the perspectives from which they depict the situation. The picture drawn by the S depicts the situation from the perspective of a mental state that is ignorant to discourse-pragmatic factors and whose sole aim is to reflect that part of the reality at an abstract level. The function of the E is to re-draw this picture from the perspective of a discourse-pragmatically motivated speaker, so that it will cohesively fit into the larger picture of the discourse.

In order to avoid possible misunderstandings, we should make a remark before concluding this section. In semantics, a distinction is commonly made between

- *what sentences linguistically encode* vs.
- *what utterances communicate explicitly in particular contexts.*

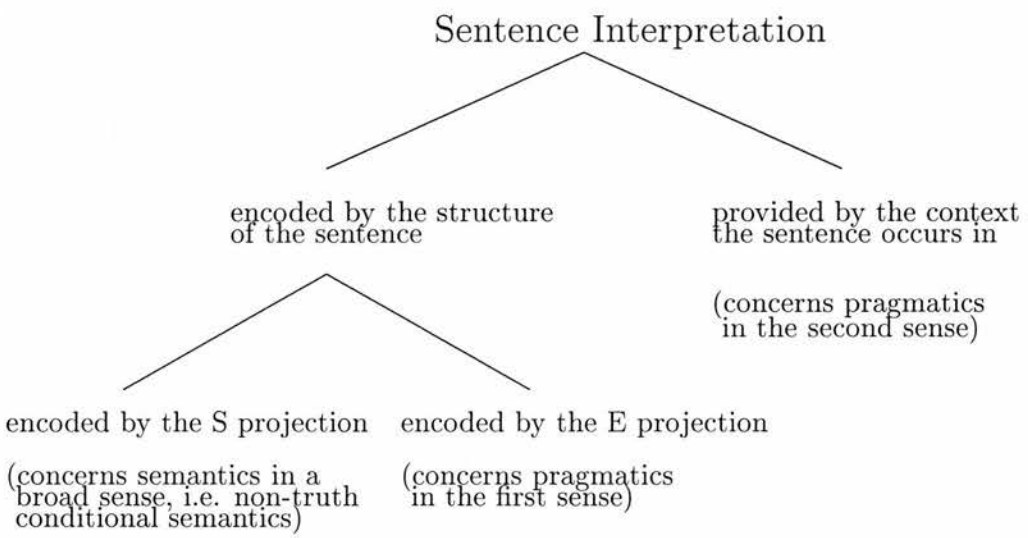
In situation semantics, the former is called the *meaning* of an expression and the latter is called the *interpretation* (or *content*) of an expression. The idea is simply that apart from some scientific expressions, a linguistic expression does not encode

[8] We use 'interpreter' as a cover term for 'speaker', 'hearer', 'reader', etc.

every aspect of its interpretation, but an important component of this interpretation is obtained from the context of use.

The distinction we make between the aspect of the interpretation structured by the S projection and the aspect of the interpretation structured by the E projection should not be equated with the *meaning/interpretation* distinction. The latter distinction is concerned with the question of which component of the interpretation is linguistically encoded and which component is contributed by the context of usage. The former distinction, on the other hand, is between two aspects of sentence meaning, i.e. between two linguistically structured components of the interpretation. It is, however, worth noting that both distinctions are closely related to the semantics-pragmatics dichotomy.[9] As Levinson (1983) puts it, the heart of the definitional problem for *pragmatics* is that this term "covers both context-dependent aspects of language structure and principles of language usage and understanding that have nothing or little to do with linguistic structure" (p. 9). The aspect of meaning structured by the E projection falls within the scope of the first sense of this term, whereas how a particular interpretation is obtained out of a meaning by the aid of contextual clues falls within the scope of the second sense of this term. In sum, we have a view of sentence interpretation that can be diagrammatically shown as follows:

(445)




That is, the S projection encodes the aspect of the interpretation that is context-independent, and the E projection gives a partial specification of the context-dependent interpretation (such as the predicational structure of the proposition

[9]See Levinson 1983 for different definitions of the *semantics/pragmatics* distinction.

expressed). A complete specification of the interpretation is obtained only by referring to the context of use.

## 6.3 Applications of the two-layer analysis of sentence interpretation to Turkish

### 6.3.1 Predicational issues

In the preceding section, we have hypothesised that the S projection structures the aspect of sentence meaning that is independent of the linguistic context of usage. In this subsection, we aim to provide evidence from Turkish that substantiates this hypothesis. The first observation we wish to make is that predicational variations within the S do not seem to have discourse-pragmatic effects on the interpretation of the sentence. In Section 6.1 we saw that sentences like (446a) and (446b) are alternative responses to the same question. We would like to emphasise that the predicational variation displayed by such sentences is not the result of an intention (on the part of the speaker) to add some extra value to their pragmatic interpretation:

(446) a. [$_S$ Bir köpek [$_{VP}$ OYA-YI ısır-dı]].
one dog Oya-acc bite-pst
'A dog bit Oya.'

b. [$_S$ Oya-yı [$_{VP}$ bir KÖPEK ısır-dı]].
Oya-acc one dog bite-pst
'A dog bit Oya.'

Assuming that there is no contextually salient set of dogs, the (a) and (b) sentences, with the indicated structures, are entirely equivalent in terms of the type of discourse-contexts where they can be used in. That is, the context will be ignorant to the difference in their predicational structures. As long as the sentences are imposed a wide-focus interpretation, they can be interchangeably employed in the same communicative and textual environment. For instance, either of these sentences will be a felicitous response to the Turkish equivalent of a question like 'What happened?', 'What's new?' or 'Why are you so sad?'.

A second observation we would like to offer is about a constraint on the choice of logical subjects for S. We have already seen that Turkish Ss may have NPs with

different grammatical roles as their logical subjects. It has also been shown that these NPs have to be strong. This, however, does not mean that the logical subject of a Turkish S can be any strong NP. An important constraint on the choice of the logical subject of a Turkish S is the following:

(447) WEAK SUBJECT PRINCIPLE:

If the grammatical subject of a Turkish sentence is strong, it has to appear in a VP-external position to serve also as a logical subject. That is, a VP-internal grammatical subject must be weak in Turkish.

Consider the pairs of sentences in (448) and (449), which are all assumed to be uttered as an answer to a question like 'What happened when I was gone?' (i.e. as an all-focus utterance):

(448) a. [$_S$ Fido [$_{VP}$ OYA-YI ısır-dı]].
Fido Oya-acc bite-pst
'Fido bit Oya.'

b. *[$_S$ Oya-yı [$_{VP}$ FIDO ısır-dı]].

(449) a. [$_S$ Köpek-ler-den bir-i [$_{VP}$ OYA-YI ısır-dı]].
dog-pl-abl one-poss3 Oya-acc bite-pst
'One of the dogs bit Oya.'

b. *[$_S$ Oya-yı [$_{VP}$ Köpek-ler-den BIR-I ısır-dı]].

In these examples, the grammatical subjects cannot appear VP-internally. They must be VP-externalised, and thereby, they must also function as logical subjects. In (448), the grammatical subject is a proper name. Hence, it is both epistemically specific and definite. In (449), the grammatical subject is partitive. All these are strong readings. Therefore, the (b) sentences are ruled out by the constraint stated in (447).

The examples below, where all the sentences are supposed to be uttered in a similar context (i.e. in a context where they will receive all-focus interpretations), provide further support for this claim:

(450) a. [$_S$ Birkaç adam [$_{VP}$ OYA-YI ara-dı]].
some man Oya-acc call-pst
'Some men called Oya.'

b. [$_S$ Oya-yı [$_{VP}$ birkaç ADAM ara-dı]].
Oya-acc some man call-pst
'Some men called Oya.'

(451) a. [$_S$ Bütün adam-lar [$_{VP}$ OYA-YI ara-dı]].
all man-pl Oya-acc call-pst
'All the men called Oya.'

b. *[$_S$ Oya-yı [$_{VP}$ bütün ADAM-LAR ara-dı]].

The grammatical subject in (451) is strongly quantified. As a result of this, it is forced to leave the VP-internal position. The weakly quantified grammatical subject in (450), on the other hand, can appear either VP-internally or VP-externally.

Clearer evidence for the claim in (447) can be obtained by means of subordinate clauses. As it will be recalled from Section 6.1, in Turkish the grammatical subject of a nominalised subordinate clause must carry the genitive suffix (i.e. *-(n)In*) if it is VP-externalised to a logical subject position, and it does not carry any case morphology if it is VP-internal. Therefore, we should expect that a strong NP can only appear in the subject position of a subordinate clause if it has case morphology. The lack of case morphology would mean that the strong subject NP is VP-internal and this would violate the constraint put forward in (447). Let us start our observations with (informationally) definite NPs.

In Section 2.1, we saw that a definite NP comes with a shared set, which is a pragmatically restricted set of entities in which the referent is located. As will be recalled, among such shared sets are the *immediate situation set*, the *previous discourse set*, the *larger situation set* and the *association set*. The examples below show that any kind of definite NP is obliged to carry the genitive suffix when it functions as the grammatical subject of a subordinate (Turkish) clause. The examples are not embedded in particular discourse-contexts, because the *-marked sentences are ungrammatical (hence unacceptable in any possible context):

(452) *The shared set is the immediate situation set:*

a. Lamba-yı *sen-in/şu* *adam-ın* kır-dığ̃-ı-nı
lamp-acc you-gen2/that.over.there man-gen3 break-ger-poss3-acc
gör-dü-m.
see-pst-1sg
'I saw that *you/that man over there* broke the lamp.'

b. *Lamba-yı *sen/şu adam* kır-dığ̃-ı-nı gör-dü-m.

(453) *The shared set is the previous discourse set:*

Oda-da bir çocuk$_i$ ve bir kadın$_j$ var-dı.
room-loc one child and one woman present-pst

'There was a child$_i$ and a woman$_j$ in the room.'

a. Kadın$_j$ *çocuğ̃-un$_i$* uyu-duğ̃-u-nu san-ıyor-du.
woman child-gen3 sleep-ger-poss3-acc think-prog-pst
The woman$_j$ thought that *the child$_i$* was sleeping.'

b. *Kadın$_j$ *çocuk$_i$* uyu-duğ̃-u-nu san-ıyor-du.

(454) *The shared set is the larger situation set:*

a. Bu kitab-ı *Chomsky-nin/Başbakan-ın* yaz-dığ̃-ı-nı
this book-acc Chomsky-gen3/Prime.Minister-gen3 write-ger-poss3-acc
bil-mi-yor-du-m.
know-neg-prog-pst-1sg
'I didn't know that *Chomsky/the Prime Minister* wrote this book.'

b. *Bu kitab-ı *Chomsky/Başbakan* yaz-dığ̃-ı-nı bil-mi-yor-du-m.

(455) *The shared set is the association set:*

Dün bir otobüs-e bin-di-m.
yesterday one bus-dat get.on-pst-1sg

'I got on a bus yesterday.'

a. Bir müddet sonra, ansızın *şoför-ün* uyu-duğ̃-u-nu
one while after suddenly driver-gen3 sleep-ger-poss3-acc
farket-ti-m.
notice-pst-1sg
'After a while, I suddenly noticed that the driver was sleeping.'

b. *Bir müddet sonra, ansızın *şoför* uyu-duğ̃-u-nu farket-ti-m.

All the subject NPs of the subordinate sentences in the examples above receive definite interpretations in one way or other. This makes it necessary for them to carry the genitive suffix. The same constraint also applies to the partitive or strongly quantified grammatical subject of a subordinate clause. The examples in (456) and (457) illustrate this fact:

(456) *Partitive:*

a. Kaya Oya-yı *köpek-ler-den bir-i-nin* ısır-dığ-ı-nı
Kaya Oya-acc dog-pl-abl one-poss3-gen3 bite-ger-poss3-acc
söylü-yor.
say-prog
'Kaya says that one of the dogs bit Oys.'

b. *Kaya Oya-yı *köpek-ler-den bir-i* ısır-dığ-ı-nı söylü-yor.

(457) *Strongly Quantified:*

a. Bilimadamları bu gezegen-de *bütün canlı-lar-ın / çoğu*
scientists this planet-loc all creature-pl-gen3 most
*canlı-nın* yaşa-yabil-eceğ-i-ni söylü-yor-lar.
creature-gen3 live-able-fut-poss3-acc say-prog-3pl
'Scientists say that *all creatures / most creatures* can live in this planet.'

b. *Bilimadamları bu gezegen-de *bütün canlı-lar / çoğ canlı* yaşa-yabil-eceğ-i-ni söylü-yor-lar.

A weakly quantified NP, on the other hand, can appear either with or without case morphology as the grammatical subject of a subordinate clause:

(458) a. Bilimadamları bu gezegen-de *birkaç canlı-nın / birçok*
scientists this planet-loc some creature-gen3 many
*canlı-nın* yaşa-dığ-i-ni söylü-yor-lar.
creature-gen3 live-ger-poss3-acc say-prog-3pl
'Scientists say that *some creatures / many creatures* live in this planet.'

b. Bilimadamları bu gezegen-de *birkaç canlı / birçok canlı*
scientists this planet-loc some creature many creature
yaşa-dığ-i-ni söylü-yor-lar.
live-ger-poss3-acc say-prog-3pl
'Scientists say that *some creatures / many creatures* live in this planet.'

Finally, if the grammatical subject of a subordinate clause receives some sort of epistemically specific interpretation, it is obliged to carry the genitive suffix. Consider the pair of sentences in the following example:

(459) a. Kaya Oya-yı *bir köpeğ-in* ısır-dığ-ı-na inan-ıyor.
Kaya Oya-acc one dog-gen3 bite-ger-poss3-dat believe-prog

'Kaya believes that a dog bit Oya.'

b. Kaya Oya-yı *bir köpek* ısır-dığ̃-ı-na inan-ıyor.
Kaya Oya-acc one dog bite-ger-poss3-dat believe-prog
'Kaya believes that a dog bit Oya.'

Of these two sentences, only the (a) one can be used to describe Kaya's mental state if his belief holds of a particular dog. For instance, if Kaya believes that Fido bit Oya and if the hearer does not know Fido, the speaker can use (459a) to report this belief but s/he cannot use (459b) for the same purpose. The belief ascribed to Kaya by this latter sentence is not concerned with any particular dog. For it to be true, it is sufficient for any dog to have bitten Kaya, It does not matter whether this was Fido or not. If it turns out that a dog other than Fido bit Oya, the belief encoded by (459b) will be true but Kaya's original belief (i.e. that Fido bit Oya) will be wrong.

The conclusion that follows from all these examples is this: In Turkish, once a grammatical subject is assigned a strong interpretation, it is forced to function as the subject of predication of its S. This is an obligation that arises independent of the speaker's intentions or discourse-pragmatic factors. There is no possible discourse-context where any of the *-marked sentences in the examples above (i.e. those with a VP-internal strong grammatical subject) could be judged as acceptable. That is, their unacceptability has nothing to do with the choice of context. This is an expected manifestation of the context-independent nature of the S-level interpretation.

### 6.3.2 Morphological issues

**The semantics of accusative morphology in Turkish:**

In Section 3.2, we argued that:

(460) Weak Object Principle:

The lack of case morphology in the DO position of a Turkish sentence signals that the semantic material of the nominal occupying this position is part of the described situation or that the described situation is also the resource situation for the nominal.

One of the examples which we provided to support this claim was the following:

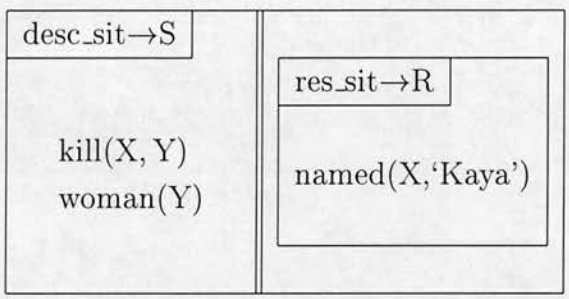
(461) Kaya NIÇIN tutukla-n-mış?
Kaya why arrest-pass-pst
'Why was Kaya arrested?'

a. Çünkü Kaya bir KADIN-I öldür-müş.
because Kaya one woman-acc kill-pst
'Because he killed a woman.'

b. ??Çünkü Kaya bir KADIN öldür-müş.
because Kaya one woman kill-pst

As its DO does not bear case morphology, the sentence in (461b) is obliged to receive an interpretation that can be represented as in (462). (We ignore the conjunction word).

(462)




In other words, in an utterance of sentence (461b) the victim's being a woman will be considered to be part of the situation that caused the situation which is referred to in the question (i.e. the one where Kaya was arrested) to happen. However, according to our factual world knowledge, the gender of a murdered person cannot be a determining factor for the arrest of the murderer. Hence, sentence (461b) sounds considerably odd in the given context.

We also observed that the sentence in (461b) could be rendered entirely acceptable by altering the context of utterance. For instance, because foregrounding the fact that the murdered person was a woman will make sense, this sentence will be a felicitous response to a question like:

(463) Bazı feminist örgüt-ler NIÇIN Kaya-yı öldür-mek isti-yor-lar.
some feminist organisation-pl why Kaya-acc kill-inf want-prog-3pl
'Why do some feminist organisations want to kill Kaya?'

Another observation we offered was that a sentence like:

(464) Çünkü Kaya bir ADAM öldür-müş.
because Kaya one man kill-pst
'Because Kaya killed a man (someone).'

would be a perfect reply to the question in (461), because the DO could be given a gender-neutral interpretation to describe the situation in question. That is, when uttered as an answer to the question in (461) this sentence would mean that *Kaya killed someone*, not that *Kaya killed a male person.*

Now, given these observations about the lack of case morphology in the DO position, a question comes to mind as to whether we should have not complemented the principle in (460) with the one below:

(465) STRONG OBJECT PRINCIPLE (version 1):

The use of accusative morphology in the DO position of a Turkish sentence signals that the resource situation for the nominal occupying this position is a situation other than the described one (or the semantic material of the nominal is part of a resource situation that is different from the described one).

Grönbech (1936) claims that the Turkish accusative suffix, *-(y)I*, came into being as a means to separate the semantic content of the object nominal from that of the verb (mentioned in Nilsson 1985). Given that we take the semantic material encoded by the verb to be an indispensable element of the described situation, (465) might be thought of as a situation-theoretic formulation of Grönbech's claim.

However, we have refrained from putting forward (465) as a principle that applies to Turkish, because there are apparent counterexamples to it in its current form. For example, the sentences in (466) and (467) could be respectively uttered as responses to the questions in (461) and (463) with exactly the same interpretations that would be assigned to their accusative morphemeless counterparts.

(466) Çünkü Kaya bir ADAM-I öldür-müş.
because Kaya one man-acc kill-pst
'Because Kaya killed a man (someone).'

(467) Çünkü Kaya bir KADIN-I öldür-müş.
because Kaya one woman-acc kill-pst
'Because he killed a woman.'

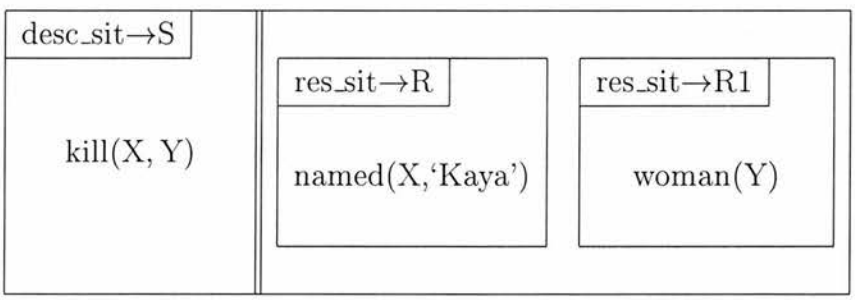
These examples show that it is possible for the semantic material of a case morphology bearing DO to be part of the described situation. So, should we reject the claim made in (465) and assume that the use of accusative morphology in Turkish has nothing to do with the described situation/resource situation distinction? Rather than do that, we propose to revise (465) in the light of our two-layer analysis of sentence interpretation:

(468) STRONG OBJECT PRINCIPLE (last version):

The use of accusative morphology in Turkish indicates that the DO is interpreted as part of a resource situation (that is different from the described one) in the S-level (i.e. semantic) interpretation of the sentence.

We suggest that what is happening in (466) and (467) is an instance of presupposition cancellation (cf. Chapter 2, footnote 16). Although the DOs receive a background status in the semantic interpretation of the sentence, their informational status is changed into a foregrounded one on the discourse-pragmatic layer of interpretation. That is, it is our suggestion that while (462) represents the discourse-pragmatic interpretation of (467) (in the provided context), (469) represents its semantic meaning (i.e. the component of its meaning ignorant to discourse-pragmatic effects):

(469)




The proposition R1 $\models$ woman(Y), which is backgrounded in (469), is cancelled, and its infon (woman(Y)) is placed in the focus of description in (462).

**A general overview of the semantics of case morphology in Turkish:**

Nilsson (1985) makes the following claim for case marking semantics in Turkish:

> ... the accusative marking contrasts not only with non-marking but also with other instances of case marking, indicating more strongly than the

other possible markings that the referent of the object phrase is totally involved in the event described. (p. 42)

Nilsson is not using situation-theoretic notions here. She does not have a multi-layer interpretation of sentences like ours, either. Still, what she argues can be easily expressed in our terminology. Let us first see some of the examples which she offers to support her claim:

(470) a. Bir gün-de *Istanbul-u* gez-di-k.
one day-loc Istanbul-acc stroll-pst-1pl
'We saw Istanbul in one day.'

b. Bütün gün *Istanbul-da* gez-di-k.
whole day Istanbul-loc stroll-pst-1pl
'We strolled about in Istanbul the whole day.'

(471) a. *Dağ-lar-ı* geç-ti-k.
mountain-pl-acc pass-pst-1pl
'We passed the mountains.'

b. *Dağ-lar-dan* geç-ti-k.
mountain-pl-abl pass-pst-1pl
'We passed through/past/out of the mountains.'

(472) a. *Kâğıd-ı* üfle-di-m.
paper-acc blow-pst-1sg
'I blew (away) the paper.'

b. *Kâğıd-a* üfle-di-m.
paper-dat blow-pst-1sg
'I blew at/in the paper.'

In each of these examples, the accusative marked object NP contrasts with the non-accusative marked one in that it implies a higher degree of involvement of its referent in the described event. "The accusative marked object to *gez-* in [470a] brings with an implication that one experiences all of Istanbul, or at least as much of it as one wants to experience. The locative object in [470b] notes first of all the place for the strolling about, but it does not call forth the consideration of Istanbul as a whole" (p. 42). Similarly, the accusative marked object in (471a) implies that one passes all the mountains in question. The ablative marked object does not have this implication. Its sentence will be true even if most of the mountains are not passed through. Finally, sentence (472a) implies that the object was certainly affected by

my action. (472b) is neutral in that respect. It says that I blew at the paper but it does not say that the paper moved as a result of my action.

Apparently, other things being equal, a non-accusative suffix has the implication that the object is not entirely involved within the boundaries of the described situation. However, as in the case of the accusative suffix, the context of utterance can override this implication. The following utterances can be a felicitous continuation to the (b) utterances in (470)-(472), respectively:

(473) Aşağı yukarı her yer-i-ni gör-dü-k.
almost every place-poss3-acc see-pst-1pl
'We saw almost all of it.'

(474) Her bir-i-nde bir gece kal-dı-k.
every one-poss3-loc one night stay-pst-1pl
'We spent a night in each of them.'

(475) Uçup git-ti.
flying go-pst
'It flew away.'

Each of these utterances implies that the object of the previously described situation is totally involved in that situation.

Now, resting on these observations and our claim that the accusative suffix signals the DO's being interpreted as part of a resource situation (different from the described one) on the semantic layer of interpretation, we seem to be justified to put forward the following proposal:

(476) Semantics Principle for Turkish Case Morphology:

In Turkish (ignoring incorporated nominals) the use of case morphology indicates that the semantic material of the nominal serves to describe a resource situation (not identical with the described one) on the semantic layer of interpretation of the sentence. The informational status of the nominal may or may not be changed into a foregrounded one on the discourse-pragmatic layer of interpretation depending on the pragmatic context of utterance.

Admittedly, we are far from being able to say that we have substantiated this or other claims in this section to a satisfactory extent. But, we think that we have provided a plausible explanation of some linguistic facts in Turkish, which, we hope, might serve as a ground for further investigation and discussion.

## 6.4 Summary

The discussion offered in this chapter is divided into three parts. In the first part, we argued that there are (at least) two semantic constraints that apply to subjects of predication. First, a logical subject must be strong. Second, the semantic interpretation of a logical subject cannot be dependent on that of its predicate. In the second part of our discussion, we claimed that the S and E projections respectively structure the semantic and pragmatic components of the meaning of the sentence. In the third part, we saw how a distinction between these two components of the meaning allows us to give straightforward and plausible explanations of some facts about predication and case marking in Turkish.

# Chapter 7

# Grammar

In the preceding chapters, we analysed the interaction of sentence and NP interpretation with syntax, prosody and morphology in Turkish. In this chapter, we will bring together and formalise our major findings by means of an HPSG grammar. In Section 7.1, we will make an introduction to those aspects of HPSG that are relevant to our discussion. We will adopt one of the latest versions of HPSG, namely the one presented in Chapter 9 of Pollard & Sag (1994) (henceforth P&S-94). In Section 7.2, we will propose some modifications and extensions to HPSG, which seem to be necessary for us to express our analysis of Turkish within that formalism. In Section 7.3, we will develop a fragment of grammar for Turkish within the modified HPSG formalism. Our aim, of course, is not to give a complete grammatical analysis of Turkish, but to capture most of the linguistic facts discovered in the preceding chapters in a formal way.

## 7.1 An overview of HPSG

### 7.1.1 A formal model of linguistic signs

Head-driven Phrase Structure Grammar (HPSG) is an integrated theory of natural language syntax and semantics, developed principally by Pollard & Sag (1987, 1994). An important aspect of this linguistic theory is the great emphasis placed on mathematical precision and formal rigour. Obscure and intuition-bound notions are eschewed, and the theory is based on a carefully defined model of linguistic objects. This aspect of the theory has played a significant role in its being a predominant

formalism in computational linguistics in recent years.

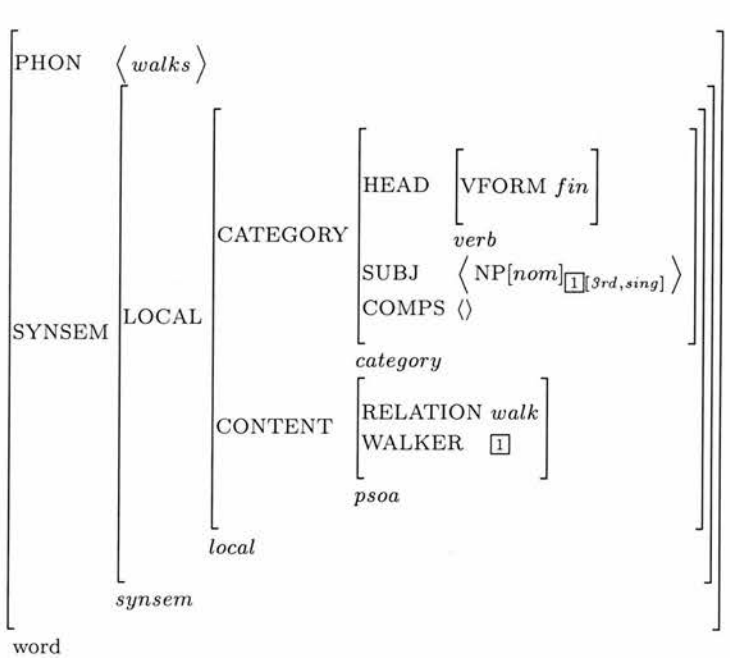
In HPSG, every linguistic object is modeled as a *sorted feature structure* (Moshier 1988; Pollard & Moshier 1990). A feature structure is a finite, possibly empty, collection of feature-value pairs, where the value is itself a feature structure. A sorted feature structure is one that is labelled with a *sort symbol* that tells what sort of object the structure is modeling. For each sort, only certain feature-value pairs are defined as *appropriate*. Sorts are organised in an inheritance hierarchy, whereby the properties (e.g. appropriate features) of more general sorts are inherited by their more specific subsorts.

The most general sort in HPSG is the sort *sign*, which is the sort of linguistic expressions (in roughly the Saussurean sense). Signs fall into two disjoint subsorts, *phrasal* signs and *lexical* signs. The former are of sort *phrase* and the latter of sort *word*.

### 7.1.2 Lexical signs

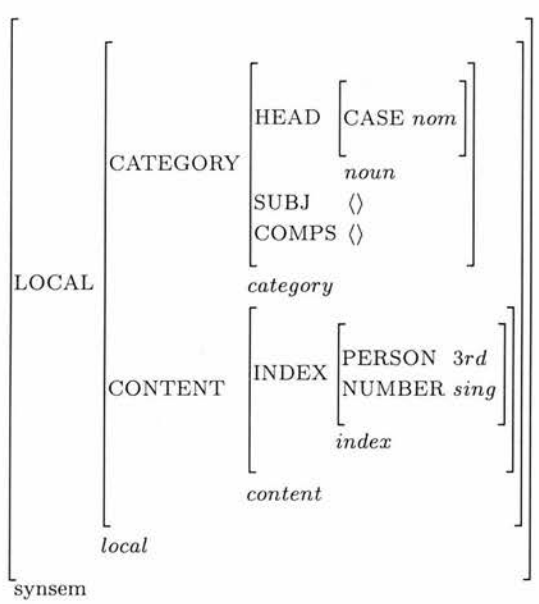
The sign in (477) is the lexical sign for *walks*:

(477)




Here NP$[nom]_{[3rd,sing]}$ is an abbreviation for the following structure:

(478)




All signs at minimum possess the features PHONOLOGY (PHON) AND SYNTAX-SEMANTICS (SYNSEM).

The value of PHON is assumed to be some kind of feature representation of the sign's sound content that serves as the basis for phonological and phonetic interpretation. In P&S-94 this is simply an orthographic representation of the corresponding lexical item, e.g. **walks**.[1] The value of SYNSEM is another structured object, of sort *synsem*, with the two appropriate features LOCAL (LOC) and NONLOCAL (NONLOC).

The information provided by the feature NONLOC (not represented in (477)) figures centrally in the analysis of unbounded dependency phenomena. We will return to this feature later on.

The value of LOC is a feature structure with three appropriate features called CATEGORY (CAT), CONTENT (CONT) and CONTEXT (CONX). The CAT feature encodes mainly the syntactic properties of the sign, such as the syntactic category and subcategorization requirements. The feature CONT contains information about aspects of semantic interpretation which are to be context-independent. The value of CONT is an object of sort *content (cont)*, with the subsorts *parametrized-state-of affairs (psoa)*, *nominal-object (nom-obj)* and *quantifier (quant)*.

Recall that 'parametrized state of affairs (psoa)' is another term used for *infons* in situation theory. Such objects are used, for instance, as the content of verbs, as

[1] In the notational system we adopt in this chapter, angle-brackets and curly braces are respectively used to give abbreviated descriptions of lists and sets, with '{}' describing the empty set and '<>' describing the empty list.

illustrated in (477). We would like to note in passing that the object in the SUBJ feature in CATEGORY and the argument of the role in CONTENT are labelled with identically numbered tags in (477). This indicates that there is *structure sharing* between the two values. Structure sharing is a useful tool to express interactions between different kinds of linguistic information. It essentially implies that two different features in a feature structure share exactly the same linguistic object as their value, i.e. they are token-identical.

A feature structure of sort *nom-obj* is employed as the content value of a nominal. It includes the INDEX (IND) and RESTRICTION (RESTR) features. The INDEX value, a structure of sort *index (ind)*, is the HPSG analog of a reference marker in discourse representation theory (DRT: Kamp 1981) or of a parameter introduced by an NP use in situation semantics. Indices have three features: PERSON (PER), NUMBER (NUM) and GENDER (GEND). The information stored via these features is used to handle cases of agreement between two expressions: there is an agreement between two expressions if their INDEX values are structure-shared. The value of the RESTR feature is a set of infons, which serve to constrain the range of entities which the nominal may refer to or quantify over. To give an example, the content value of the common noun *dog* would be as in (479):[2]

(479)
$$\begin{bmatrix} \text{INDEX} & \boxed{1}\begin{bmatrix} \text{PER} & 3rd \\ \text{NUM} & sing \\ \text{GEND} & neut \end{bmatrix} \\ \text{RESTRICTION} & \left\{\begin{bmatrix} \text{RELATION} & dog \\ \text{INSTANCE} & \boxed{1} \end{bmatrix}\right\} \end{bmatrix}$$

A structure of sort *quant* has the form shown in (480):

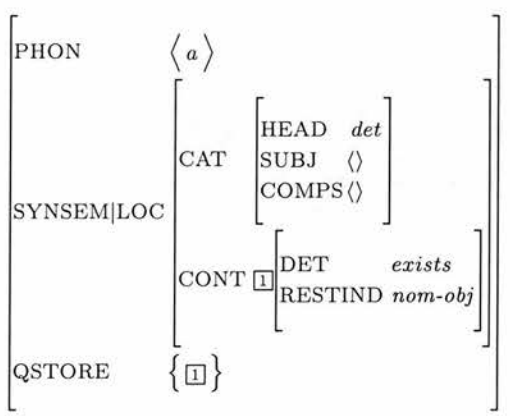
(480)
$$\begin{bmatrix} \text{DET} & semdet \\ \text{RESTIND} & nom\text{-}obj \end{bmatrix}$$

The value of DET is a semantic determiner like *exists* and *forall*. A structure like this can be, for instance, the CONTENT value of a determiner. Besides, it can be a (set) element of a feature called QUANTIFIER-STORE (QSTORE), which is appropriate for

[2]Henceforth, sort symbols, showing the sorts of feature structures, will mostly be omitted.

signs of quantificational expressions. As an example, (the partial description of) the lexical sign for the determiner *a* would be as in (481):

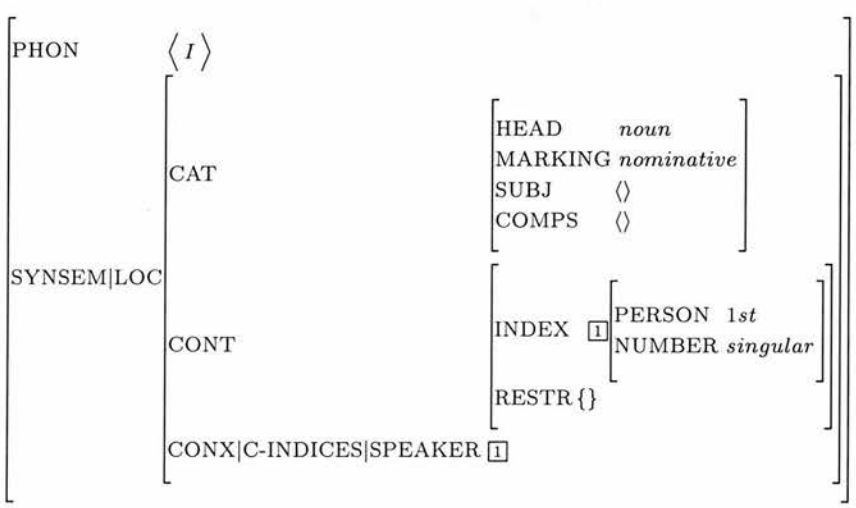
(481)




The feature QSTORE is introduced to deal with scopal ambiguities by using a version of Cooper's (1975, 1983) storage technique. We will briefly touch upon this matter in the next section.

Finally, the CONTEXT feature of objects of sort *loc* provides certain context-dependent linguistic information. For example, the constraint that a first-singular pronoun must refer to the speaker is encoded as a value of this feature. The following is the lexical sign for *I*:

(482)




The structure-sharing between the value in the INDEX feature in CONT and the value of the path C-INDICES|SPEAKER in CONX indicates that the index must anchor to the speaker in a particular context of utterance.

### 7.1.3 Phrasal signs and principles

Phrases, which result from combining signs, constitute the second subsort of signs. Unlike *word* objects, objects of sort *phrase* have the feature DAUGHTERS (DTRS), in addition to PHON and SYNSEM. The value of DTRS is a feature structure of sort *constituent-structure (con-struc)*, representing the immediate constituent structure of the phrase. The sort *con-struc* has various subsorts characterised by the kinds of daughters that appear in them, such as *headed-structure (head-struc)* and *coordinate-structure (coord-struc)*. The subsorts of *head-struc* are *head-complement-structure (head-comps-struc)*, *head-subject-structure (head-subj-struc)*, *head-subject-complement-structure (head-subj-comp-struc)*, *head-marker-structure (head-mark-struc)*, *head-specifer-structure (head-spec-struc)*, *head-adjunct-structure (head-adj-struc)* and *head-filler-structure (head-filler-struc)*. Below we will look at the analysis of phrases of some of these sorts.

In HPSG phrases are licensed by immediate dominance (ID) schemata. As P&S-94 put it, "these are the principles, variously known as 'grammar rules', 'immediate dominance (ID) rules', 'phrase structure rules', or '$\bar{\text{X}}$-schemata', that in effect serve as templates for permissible local phrase structure trees or configurations of immediate constituency" (p. 37). Below are two universally available ID schemata:

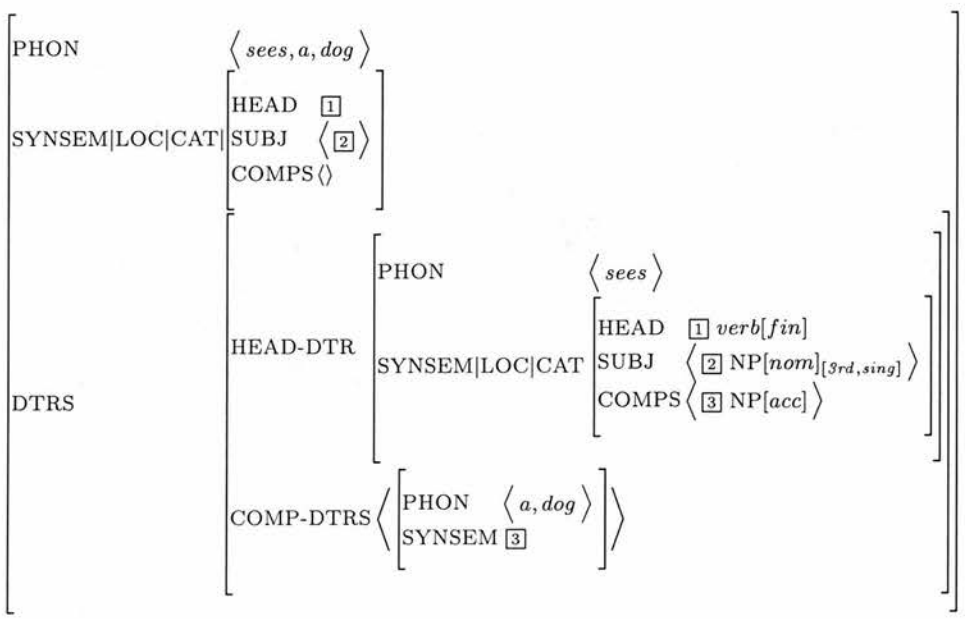
(483) SCHEMA 1: a phrase with DTRS value of sort *head-subj-struc* in which the HEAD-DTR value is a phrasal sign.

SCHEMA 2: a phrase with DTRS value of sort *head-comp-struc* in which the HEAD-DTR value is a lexical sign.

(P&S-1994:347-348)

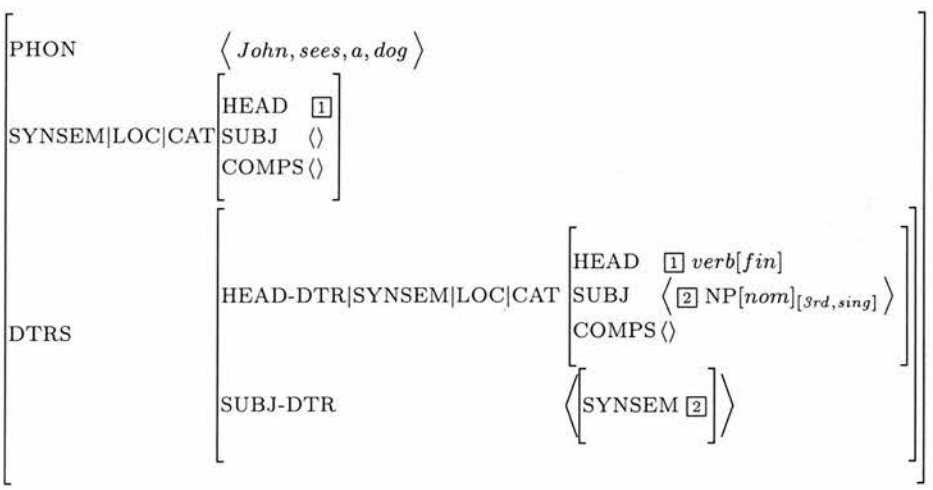
For example, the following structure, which corresponds to the VP *sees a dog*, will be licensed by Schema 2:

(484)




and the combination of this VP with the NP *John* to form a sentence will be licensed by Schema 1:

(485)




There are several important points to note about the structures in (484) and (485). The first point is about the SUBJ and COMPS features. In both cases, the concatenation of the lists of SUBJ and COMPS values of the mother is the same as the concatenation of the lists of SUBJ and COMPS values of the head daughter except one element. In each case, the missing element corresponds to the object in the list value of the non-head daughter. This state of affairs is a manifestation of the *Valence Principle*, which P&S-94 state as follows:

(486) VALENCE PRINCIPLE:

In a headed phrase, for each valence feature F, the F value of the head daughter is the concatenation of the phrase's F value with the list of SYNSEM values of the F-DTRS value. (p. 348)

In the given examples, F ranges over the 'valence features' SUBJ and COMPS. Later on, a third valence feature will be added: SPR (SPECIFIER). Roughly speaking, the Valence Feature ensures that any unsaturated subcategorization requirements are passed up to its mother.

The second point to note is that the HEAD value of the mother is token-identical to that of the head daughter (in both (484) and (485)). This state of affairs exemplifies a second principle that constrains phrases, namely the *Head Feature Principle*:

(487) HEAD FEATURE PRINCIPLE (HFP):

The HEAD value of any headed phrase is structure-shared with the HEAD value of the head daughter. (P&S-94:34)

The effect of this principle is to guarantee that headed phrases really are 'projections' of their head daughters.

As a third point, we would like to note in passing that the examples in (484) and (485) also illustrate how the subject-verb agreement is handled in HPSG. The subject's SYNSEM value (and therefore the INDEX value) is structure-shared with that of the SUBJ element of the lexical head. Thus the lexical specification of the subject and the verb give rise to subject-verb agreement in conjunction with the structure-sharing imposed by the Valence Principle.

Schemata 1 and 2 effectively handle phrases of the form *Subject+VP* and *Verb+(non-Subject) Complements* in languages like English. However, as discussed in Section 4.2.4, in some languages (including Turkish) grammatical subjects can be realised VP-internally. The third schema proposed by P&S-94 licences verb phrases in these languages, as well as English 'subject-auxiliary inversion' clauses (which are assumed to have flat structures):

(488) SCHEMA 3: a [SUBJ <>] phrase with DTRS value of sort *head-subj-comp-struc* in which the head daughter is a lexical sign. (P&S-94:352)

By the HFP and the Valence Principle, any phrase in which all complements (in-

cluding the subject) are realized as sisters of the lexical head will have the general form shown in (489):

(489)

$$\begin{bmatrix} \text{SYNSEM|LOC|CAT} & \begin{bmatrix} \text{HEAD} & \boxed{1} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{bmatrix} \\ \text{DTRS} & \begin{bmatrix} \text{HEAD-DTR|SYNSEM|LOC|CAT} & \begin{bmatrix} \text{HEAD} & \boxed{1} \\ \text{SUBJ} & \langle \boxed{2} \rangle \\ \text{COMPS} & \langle \boxed{3}, \ldots, \boxed{n} \rangle \end{bmatrix} \\ \text{SUBJ-DTR} & \langle \boxed{2} \rangle \\ \text{COMP-DTRS} & \langle \boxed{3}, \ldots, \boxed{n} \rangle \end{bmatrix} \end{bmatrix}$$

In HPSG, nominals with determiners (such as *every book, a dog* and *no student*) are treated as phrases with DTRS value of sort *head-spr-struc*, where the determiner is the specifier and the N′ is the head. Such a phrase is licensed by the Head-Specifier Schema, which can simply be stated as follows:

(490) HEAD-SPECIFIER SCHEMA: a phrase with DTRS value of sort *head-spr-struc*.

For example, ignoring its semantic aspects, the noun phrase *a dog* will be analysed as follows:

(491)

$$\begin{bmatrix} \text{PHON} & \langle a, dog \rangle \\ \text{SYNSEM|LOC|CAT} & \begin{bmatrix} \text{HEAD} & \boxed{1} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle\rangle \end{bmatrix} \\ \text{DTRS} & \begin{bmatrix} \text{HEAD-DTR|SYNSEM|}\boxed{2}\text{LOC|CAT} & \begin{bmatrix} \text{HEAD} & \boxed{1}\ noun \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle \boxed{3} \rangle \end{bmatrix} \\ \text{SPR-DTR|}\boxed{3}\text{SYNSEM|LOC|CAT} & \begin{bmatrix} \text{HEAD|SPEC} & \boxed{2} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle\rangle \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

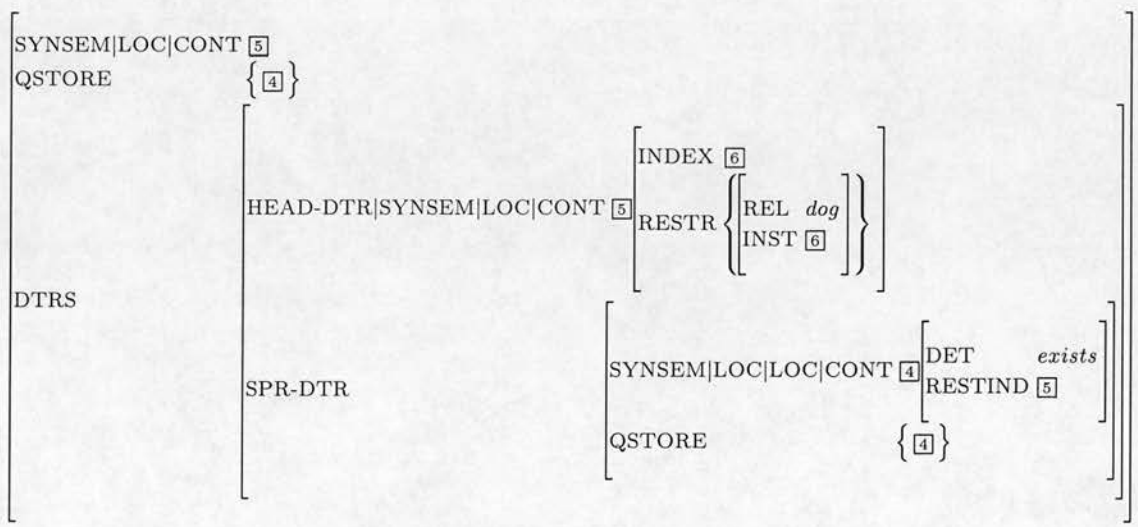
There are two new features used in this structure, the feature SPECIFIER (SPR) and the feature SPECIFIED (SPEC). SPR is a newly introduced valence feature. The value of SPR feature is structure-shared with the value of the specifier daughter, which means that the N′ subcategorizes for its determiner. P&S-94 also assume that determiners select their N′s, while the latter subcategorize the former. They effect this selection by means of the SPEC feature. Notice that the SPEC value of the specifier daughter is structure-shared with the SYNSEM value of the head daughter in the example above. The general phenomenon constraining this phenomenon is the one stated in (492):

(492) SPEC PRINCIPLE:

If a nonhead daughter in a headed structure bears a SPEC value, it is token-identical to the SYNSEM value of the head daughter. (P&S-94:51)

As for semantic issues, we will briefly touch upon a few points to receive an overall idea about P&S-94's semantic analysis of expressions. (493) shows an analysis of *a dog* according to a preliminary version of P&S-94's account of semantics:

(493)




As mentioned in the preceding section, P&S-94 propose a quantificational analysis of nominals with determiners, which is based on Cooper's (1975, 1983) storage technique. The key assumption is that "*all* quantifiers 'start out in storage'; the final scope that a quantifier receives will depend on which node it is retrieved at and on the order of its retrieval relative to other quantifiers retrieved at the same node" (P&S-94:48). Quantifiers are stored via a feature called QUANTIFIER-STORE

(QSTORE). Roughly speaking, stored quantifiers are passed from constituents to their mothers according to the principle informally stated in (494):

(494) QUANTIFIER INHERITANCE PRINCIPLE:

The QSTORE value of a phrasal node is the union of the QSTORE values of the daughters less those quantifiers that are retrieved at that node. (P&S-94:48)

In (493), as the head daughter does not have a QSTORE feature and as there is no quantifier retrieved at the mother node, the QSTORE value of the phrase is identical to the QSTORE value of the specifier.

Note that the CONTENT value of the head daughter and the CONTENT value of the mother phrase are structure-shared in (493). This is a manifestation of the Semantics Principle that is stated roughly as follows:

(495) SEMANTICS PRINCIPLE

In a headed phrase, the CONTENT value is token-identical to that of the adjunct daughter if the DTRS value is of sort *head-adj-struc*, and with that of the head daughter otherwise.

As the DTRS value in our example is not of sort *head-adj-struc*, the mother's CONTENT value is token-identical to that of the head daughter.

In a later version of P&S-94's semantic analysis of expressions, the Semantics Principle formulated above is replaced with a refined formulation, that subsumes this principle, the Quantifier Inheritance Principle and another principle (the Scope Principle) as its components. We will not go into that analysis here.

We would like to end this section by presenting the HPSG analysis of *unbounded dependency constructions* (UDCs). This term was first introduced by Gazdar (1981) to refer to a class of constructions like those in (496) (from P&S-94):

(496) a. Kim$_i$, Sandy loves $\_\__i$.

b. I wonder [who$_i$ sandy loves $\_\__i$].

c. This is the politician [who$_i$ Sandy loves $\_\__i$].

In these constructions there is a dependency between two constituents, one of which is a gap. The non-gap element is referred to as the *filler*. Such dependencies are

indeed unbounded because they may extend across arbitrarily many clause boundaries. The example in (497) illustrates this fact:

(497) a. $\text{Kim}_i$, Dana knows Sandy loves $\_\__i$.

b. $\text{Kim}_i$, John believes Dana knows Sandy loves $\_\__i$.

c. $\text{Kim}_i$, we claim John believes Dana knows Sandy loves $\_\__i$.

In this example, the sentences remain acceptable as the number of clause boundaries between the two subscripted elements increases. In principle, there is no bound on the number of such boundaries.

The HPSG analysis of UDCs is similar in spirit to the one proposed by Gazdar (1981) and Gazdar et al (1985). The essence of the analysis is that an unbounded dependency is analysed into three components:

- the bottom of the dependency, where the dependency is introduced;
- the middle of the dependency, where the dependency is successively passed from daughter to mother; and
- the top of the dependency, where the dependency is discharged or bound off.

In a relative construction (e.g. (496c)), the dependency is introduced by a relative word. In a *wh*-question (e.g. (496b), it is introduced by an interrogative pronoun. These two cases of dependency phenomena will not be our concern in this chapter.[3] We will only deal with cases similar to topicalization (e.g. (496a)). In such cases, the dependency is introduced by a gap that has a nonempty value for a feature called SLASH. How to represent gaps in syntactic structure is a controversial issue. In the early chapters of P&S-94, it is assumed that there is an empty NP ('trace') in the lexicon that can serve as a 'missing' element in the surface structure of a sentence. Below is (a simplified version of) the lexical entry for the trace:

(498)
$$\begin{bmatrix} \text{PHON} & \langle\rangle \\ \text{SYNSEM} & \begin{bmatrix} \text{LOCAL} & \boxed{1} \\ \text{NONLOCAL} & \begin{bmatrix} \text{INHERITED|SLASH} & \{\boxed{1}\} \\ \text{TO-BIND|SLASH} & \{\boxed{1}\} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

[3]See Güngördü (1997) for an HPSG analysis of relative clauses in Turkish.

This structure says that a trace has no phonology and that the single member of the set of its SLASH value is token-identical to its LOCAL value. It is the non-emptiness of the set of the SLASH value that will give rise to the introduction of a dependency, when the trace occurs as a complement of some head.

An alternative acccount of UDCs is offered in Chapter 9 of P&S-94. This is a traceless account. The basic idea is that SLASH originates not on traces, but from the head that licenses the 'missing' element. This is effected by a number of extraction lexical rules. For instance, (499) shows the basis of the lexical rule that is employed to extract complements:[4]

(499) COMPLEMENT EXTRACTION LEXICAL RULE (simplified version):

$$\begin{bmatrix} \text{COMPS} & \langle \ldots \boxed{1} \ldots \rangle \\ \text{INHER|SLASH} & \boxed{2} \end{bmatrix} \Longrightarrow \begin{bmatrix} \text{COMPS} & \langle \ldots \rangle \\ \text{INHER|SLASH} & \{ \boxed{1} \} \cup \boxed{2} \end{bmatrix}$$

Basically, (499) takes as input a lexical entry with a non-empty COMPS list and outputs a lexical entry that is exactly the same except that one element has been removed from the COMPS list and placed within the INHER|SLASH value. For example, when applied to the verb *loves*, this rule will produce an object with an empty COMPS list and an NP in the INHER|SLASH value:

(500)
$$\begin{bmatrix} \text{PHON} & \langle \textit{loves} \rangle \\ \text{SYNSEM} & \begin{bmatrix} \text{LOC|CAT} & \begin{bmatrix} \text{HEAD} & \textit{verb} \\ \text{SUBJ} & \langle \boxed{1} \rangle \\ \text{COMPS} & \langle\rangle \\ \text{SPR} & \langle\rangle \end{bmatrix} \\ \text{NONLOC} & \begin{bmatrix} \text{INHER|SLASH} & \{ \boxed{1} \} \\ \text{TO-BIND|SLASH} & \{\} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Let us now look at the second component of our dependency phenomenon, namely the middle part where the SLASH information is propagated upwards. The mechanism responsible for this propagation is one of the universal principles posited in

[4]See P&S-94:376-388 for other kinds of extraction rules and for a precise formulation of the Complement Extraction Lexical Rule.

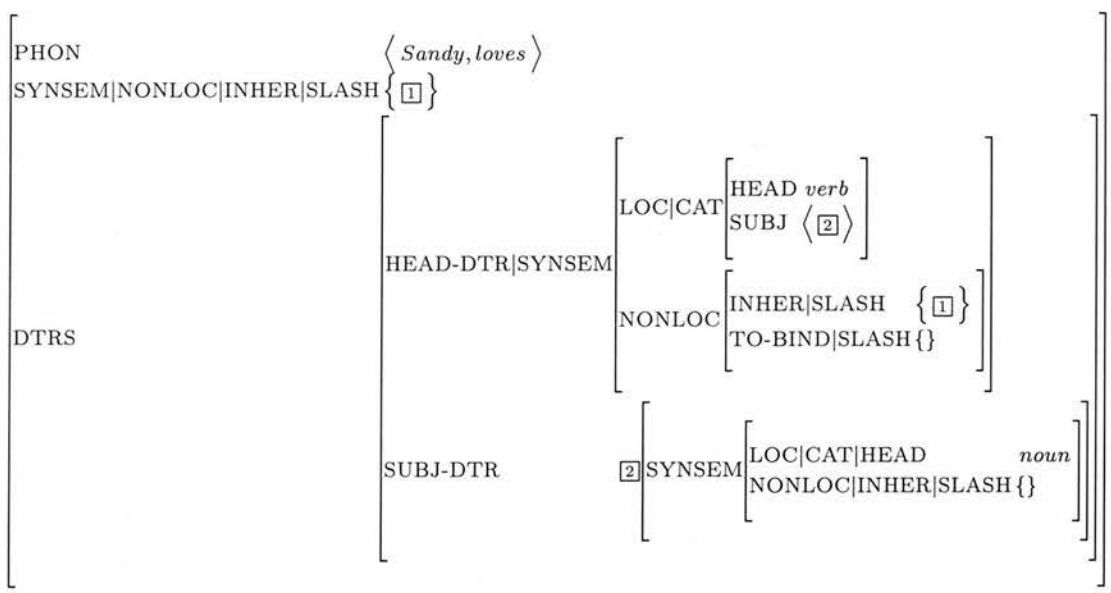
HPSG. It is called *Nonlocal Feature Principle*:[5]

(501) NONLOCAL FEATURE PRINCIPLE:

For each nonlocal feature, the INHERITED value on the mother is the union of the INHERITED values on the daughters minus the TO-BIND value on the head daughter. (P&S-94:64)

(502) illustrates a structure assigned to a sentence with a 'missing' complement according to this principle:

(502)

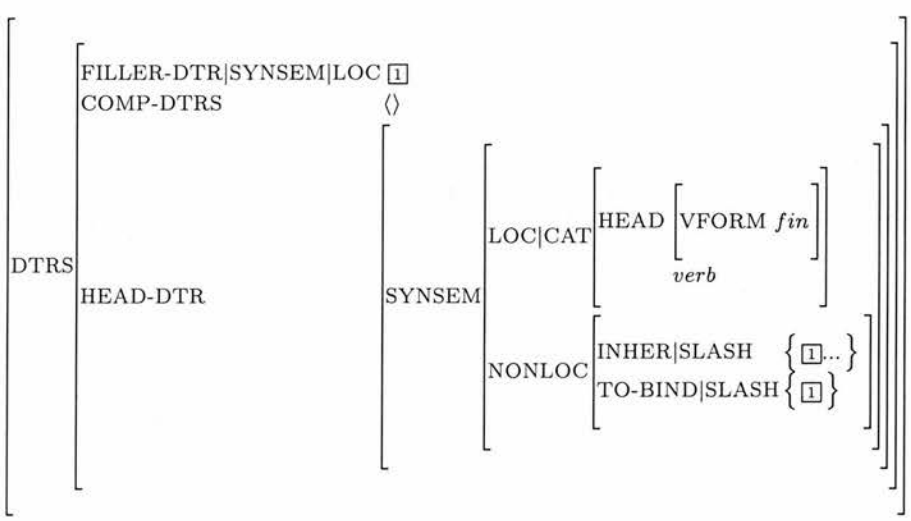



Finally, the top of an unbounded dependency, where the SLASH value is bound off or discharged, is handled by a schema called HEAD FILLER RULE. (503a) is an informal expression of this rule in rewrite form, and (503b) is a somewhat formal expression of the same rule as a feature description:

(503) a. X → [LOCAL 1], S[*fin*, INHER|SLASH {1,...}, TO-BIND|SLASH {1}]
FILLER HEAD

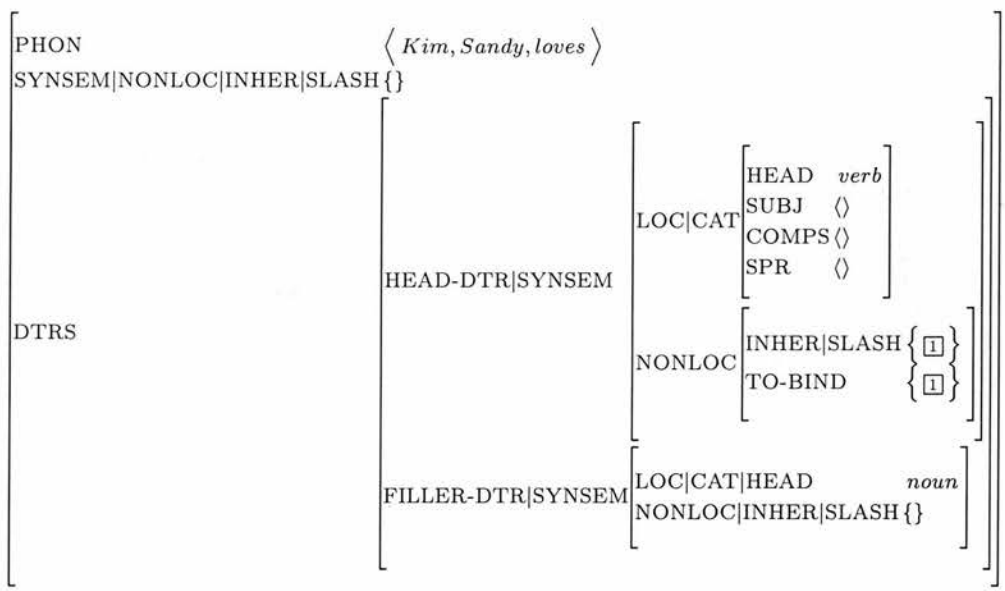
[5]The Nonlocal Feature Principle is an analogue of the *Foot Feature Principle* of Generalized Phrase Structure Grammar (GPSG).

b.




The Head-Filler Rule wil licence a phrase like *Kim, Sandy loves* in conjunction with the Nonlocal Feature Principle. (504) shows the part of this phrase where the dependency is discharged (i.e. the top part):

(504)




## 7.2 Some modifications and extensions to the structure of the sign

In this section, we will modify the structure of the sign described in the preceding section so that we can express our analysis of Turkish within the HPSG formalism in a straightforward manner. Two of the modifications which we will propose are

minor changes concerning the phonological and syntactic levels of the grammar. Let us start with the phonological one.

As it should be recalled, in P&S-94 the PHON value is simply an orthographic representation of the corresponding linguistic expression. Clearly, this will not allow us to express the interaction between phonology and the other linguistic levels in Turkish. Our analysis of this interaction relies on the identification of accents. In order to be able to express the information about accents we define the value of PHON as a feature structure of the following form:

(505)
$$\begin{bmatrix} \text{ORTHOGRAPHY} & \textit{orthography} \\ \text{ACCENT} & \textit{accent} \end{bmatrix}$$

The value of ORTHOGRAPHY (ORTH) will be the same as the value of PHON in P&S-94, an orthographic representation of the expression. The value of ACCENT will be of sort *accent* which has three subsorts: *accent-A, accent-B* and *no-accent.* To give an example, (507) illustrates the phonological level of the sign corresponding to the nominal *Oya* in (506):

(506) OYA ara-dı.
Oya call-pst
'OYA called.'

(507)
$$\begin{bmatrix} \text{PHON} & \begin{bmatrix} \text{ORTH} & \langle \textit{Oya} \rangle \\ \text{ACCENT} & \textit{accent-A} \end{bmatrix} \end{bmatrix}$$

Our second modification to the structure of the sign has to do with the syntactic level. In contrast to languages like English, nouns in Turkish do not seem to subcategorize for determiners. They all may occur as 'bare' NPs, without any determiners:

(508) a. *Köpek* Oya-yı ısır-dı.
dog Oya-acc bite-pst
'The dog bit Oya.'

b. *Köpek-ler* Oya-yı ısır-dı.
dog-pl Oya-acc bite-pst
'The dogs bit Oya.'

c. *Fido* Oya-yı ısır-dı.
Fido Oya-acc bite-pst
'Fido bit Oya.'

One way to express this fact can be to constrain the SPR values of all Turkish nouns to be empty. See, for example, Güngördü (1997) for such an approach. Another alternative can be to assume that Turkish signs do not contain the valence feature SPR. As the Valence Principle applies to valence features, this will suffice to eliminate the necessity for nouns to subcategorize for determiners. We do not see any theoretical significance to the choice between the two alternatives, at least, for our analysis. For the sake of parsimony, we will opt for the second.

Finally, we propose to modify the semantic component of HPSG signs. Unlike the two changes proposed above, this will be a radical modification. We will replace both of the features CONTENT and CONTEXT with a new feature taking as values newly defined semantic objects.

P&S-94 suggest an alternative way to treat CONTENT values of signs:

> Our treatment of CONTENT values in terms of psoas (infons), which we have adopted primarily for expository reasons, is by no means the only analysis possible within HPSG. As Richard Cooper (1990, chap. 7) has shown, it is straightforward to modify the lexical entries of verbs in such a way that general principles of HPSG theory ... cause sentences to have propositions (in the situation-theoretic sense) as their CONTENT value, rather than psoas. (p. 339)

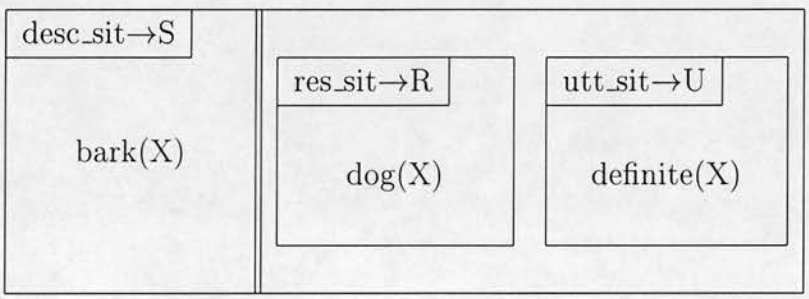
As it will be remembered, we have analysed the interpretation of sentences in terms of situation-theoretic propositions. Therefore, in order to formulate our analysis within the HPSG formalism we need to adopt a strategy similar in spirit to the one pointed out in the above quote, a strategy that will lead to a semantic analysis of sentences in terms of propositions (in the situation-theoretic sense). This will be the perspective according to which we will devise the semantic component of our grammar.

In addition, we aim to transfer the objects we have used in our semantic analysis to the HPSG formalism as straightforwardly as possible. This will, at least, make the exposition of the account easier. For example, recall that ignoring the focus-background and topic-comment partitions we have represented the interpretation of a sentence like:

(509) The dog is barking.

with an EKN object like the following:

(510)




We can re-structure this object by means of two features, PROPOSITION (PROP) and RESTRICTION (RESTR) in a direct way:

(511)

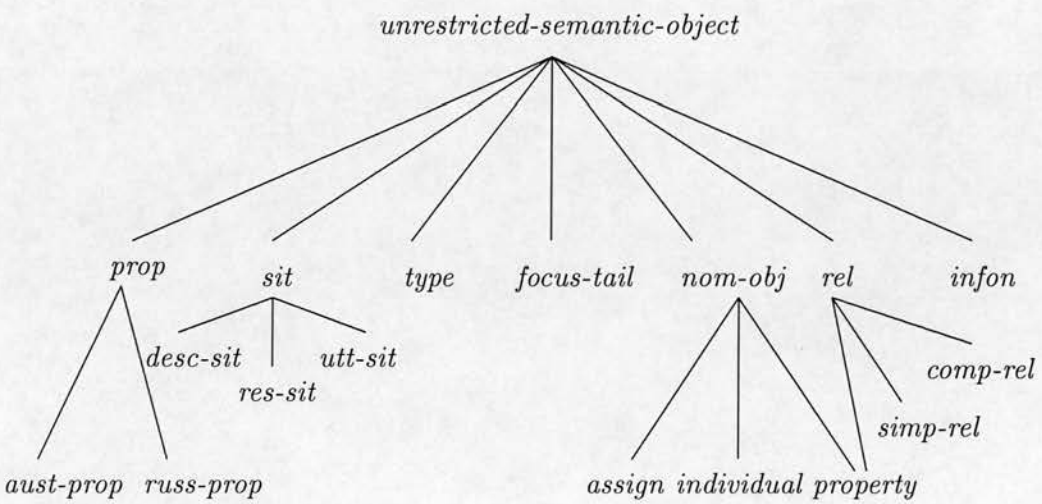
$$\left[\begin{array}{l} \text{PROP} \left[\begin{array}{l} \text{SIT} \quad \textit{desc-sit} \\ \text{INFON} \left\{\left[\begin{array}{l} \text{REL} \quad \textit{bark} \\ \text{ARGS} \left\langle \boxed{1} \right\rangle \end{array}\right]\right\} \end{array}\right] \\ \text{RESTR} \left\{\left[\begin{array}{l} \text{SIT} \quad \textit{res-sit} \\ \text{INFON} \left\{\left[\begin{array}{l} \text{REL} \quad \textit{dog} \\ \text{ARGS} \left\langle \boxed{1} \right\rangle \end{array}\right]\right\} \end{array}\right], \left[\begin{array}{l} \text{SIT} \quad \textit{utt-sit} \\ \text{INFON} \left\{\left[\begin{array}{l} \text{REL} \quad \textit{definite} \\ \text{ARGS} \left\langle \boxed{1} \right\rangle \end{array}\right]\right\} \end{array}\right] \right\} \end{array}\right]$$

Here, the value of PROP is an (Austinian) proposition, and the value of RESTR is a set of propositions. Notice that the feature RESTR is capable of encoding not only semantic (or context-independent) information but also information that reflects aspects of interpretation dependent on the pragmatic context of utterance, such as the status of referents in terms of definiteness. Therefore, we do not need two separate features, such as CONTENT and CONTEXT, to express the distinction between semantic and pragmatic information. This can be done by the distinction at our disposal between utterance situations and others. We will replace the CONTENT and CONTEXT features with the feature MEANING (MEAN), a structure of sort *semantic-object*. We should note that we have chosen the term 'MEANING' as a name of this feature intentionally. As it will be remembered from Section 6.2.2, it is a common assumption that (apart from some scientific expressions) a linguistic expression does not encode every aspect of its interpretation, but an important

component of this interpretation is obtained from the context of use. This is the position we adopt with respect to the interpretation of linguistic expressions. That is, we make a distinction between what sentences linguistically encode vs. what utterances communicate in particular contexts. Recall that these are respectively called 'meaning' and 'interpretation' of an expression in situation semantics. Our grammar is intended to decode the linguistic 'meaning' of a given expression. We assume that this meaning can be an input to a pragmatic component (about the make-up of which we will remain silent) that produces more complete or specific interpretations by the aid of contextual clues. For instance, in the meaning representaion of the sentence in (509), *the dog* will be represented by an individual parameter. The pragmatic component can anchor this parameter to a particular dog in case of a referential interpretation of the NP.

The feature structure in (511) is of sort *restricted-austinian-proposition (rest-aust-prop)*. Every sort that bears the feature RESTR will be a restricted sort. The hierarchy of sorts for unrestricted semantic objects which we will employ is shown in (512):

(512)




A Russellian proposition (i.e. an object of sort *russellian-proposition (russ-prop)*) will have the features TOPIC and COMMENT. The value of TOPIC will be a list whose elements are of sort *assignment* (*assign*), and that of COMMENT will be of sort *focus-tail*. An object of sort *focus-tail* will bear the features FOCUS and TAIL. Each of these features will take as values objects of sort *type-or-assignment* (*type-or-assign*), whose subsorts are *type* and *list-assignment* (*list-assign*). An object of sort *type* will be a proposition-abstract. In general, an abstract will be of the following form:

(513)
$$\begin{bmatrix} \text{ABSTRACTED-PARAMETERS} & \text{(a list of assignments)} \\ \text{PARAMETRIC-OBJECT} & \textit{semantic-object} \end{bmatrix}$$

The value of ABSTRACTED-PARAMETERS (ABST-PARAMS) will be a list of objects of sort *assignment*, and that of PARAMETRIC-OBJECT (PARAM-OBJ) will be of sort *semantic-object*. An object of sort *assignment* will bear the features ROLE and OBJECT, the former taking as values role indices and the latter taking as values semantic objects.

Further aspects of our semantic objects will be revealed by the examples we will use in the next section.

## 7.3 A Turkish grammar in HPSG

### 7.3.1 The scope of the grammar

In this section, we will develop a grammar within the modified version of HPSG that can capture certain aspects of the form/meaning analysis we have offered for Turkish in the preceding chapters. (514) gives the scope of the grammar in terms of interpretive issues which will be dealt with:

(514)
- (informational) definiteness (Chapter 2);
- described situation vs. resource situation distinction (Chapter 3);
- (semantic) incorporation (Chapter 3);
- focus-background (Chapter 4);
- topic-comment (Chapter 5); and
- weak object and subject principles (Chapters 3 and 6).

The grammar will express the mutual constraints on these aspects of interpretation and Turkish syntax, phonology and case morphology. Other linguistic phenomena that have been the subject matter of our analysis of Turkish (such as specificity, quantification, anaphoric relations, and semantics of S-internal predication) will remain outside the scope of the current version of our grammar.

We will start out by presenting some exemplary lexical entries for Turkish words.

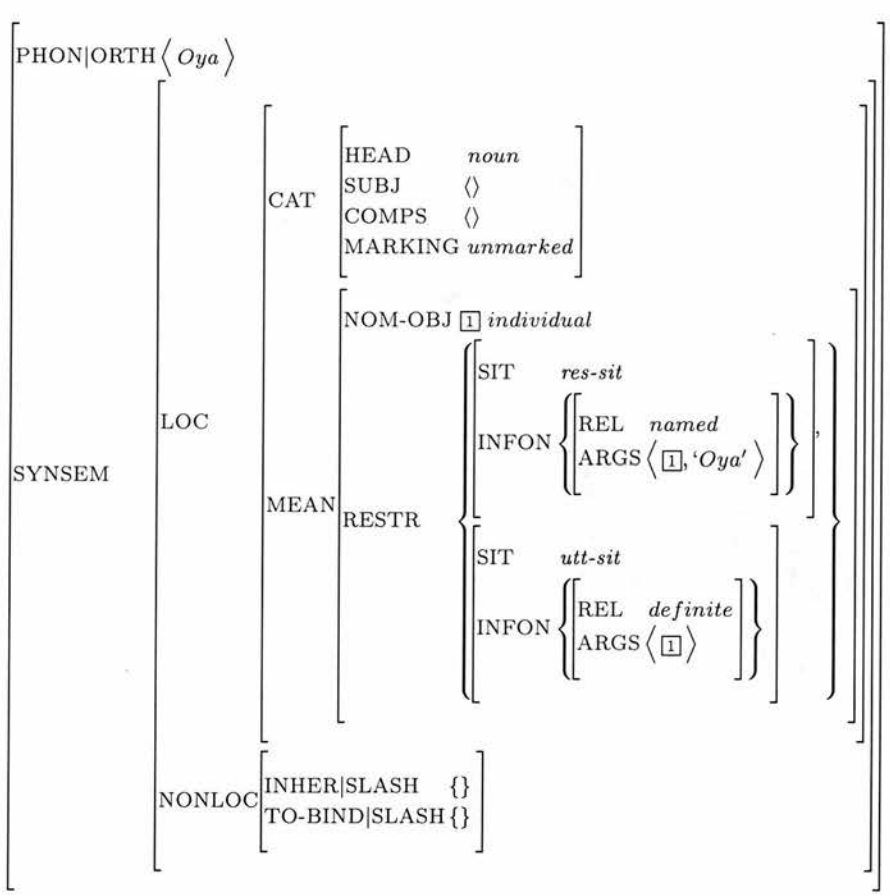
### 7.3.2 Lexical entries

In our grammar we will employ only three sorts of lexical signs: *noun*, (non-quantificational) *determiner* and *verb*. Let us consider each of these in turn.

**Nouns:**

The MEAN value of proper names will be of sort *restricted-nominal-object (rest-nom-obj)*. There are two features appropriate for this sort: NOMINAL-OBJECT (NOM-OBJ) and RESTRICTION (RESTR). (515) shows the lexical sign for the proper name *Oya*:

(515)




Apart from its PHON|ORTH value and the infon supported by its resource situation, every proper name will have the same lexical entry.

As for the lexical specification of common nouns, their NOM-OBJ value will be constrained to be of sort *property*. The lexical entry for the noun *köpek* 'dog' is shown in (516):

(516)

$$\begin{bmatrix} \text{PHON|ORTH} \left\langle \textit{köpek} \right\rangle \\ \text{SYNSEM} \begin{bmatrix} \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} & \textit{noun} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \\ \text{MARKING} & \textit{unmarked} \end{bmatrix} \\ \text{MEAN} \begin{bmatrix} \text{NOM-OBJ} & \textit{dog} \\ \text{RESTR} & \{\} \end{bmatrix} \end{bmatrix} \\ \text{NONLOC} \begin{bmatrix} \text{INHER|SLASH} & \{\} \\ \text{TO-BIND|SLASH} & \{\} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Here, *dog* is a subsort of the sort *property*.

Before moving on to the consideration of determiners and verbs, we would like to mention a distinction already discussed in Chapter 2. In Section 2.4, we saw that we can use some NPs either to refer to kinds or to talk about some objects. For instance, the italicized NPs in (517) exemplify the former use, whereas those in (518) exemplify the latter:

(517) a. *The panda* will become extinct soon.

b. *Pandas* will soon become extinct.

(from Krifka et al 1995)

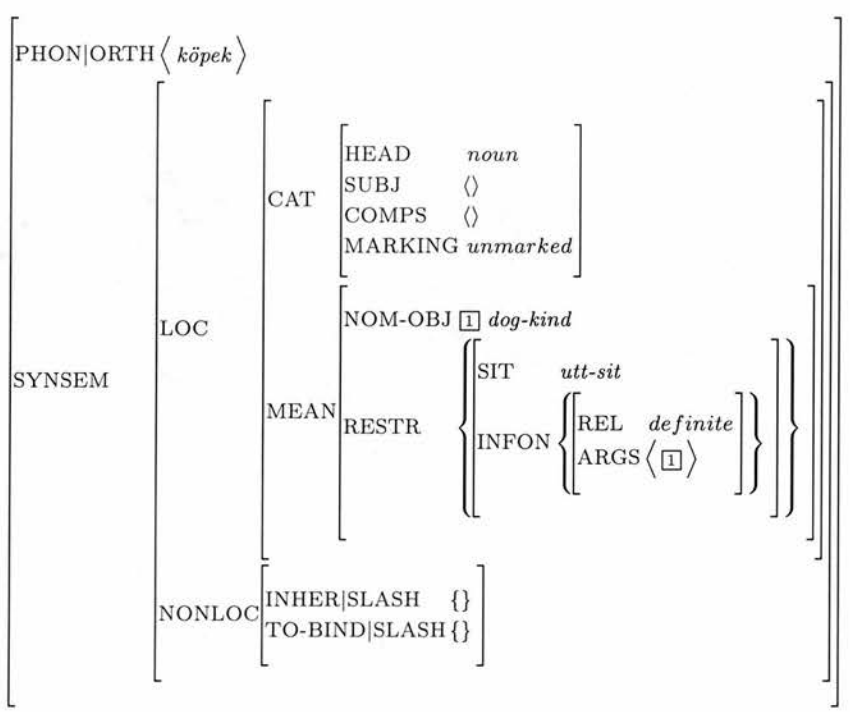
(518) a. *The panda* is sleeping.

b. John saw *pandas* in the forest.

*The panda* and *pandas* are used as kind-referring NPs in (517) and as object-referring NPs in (518). Krifka et al suggest that the noted distinction arises from the dual nature of common nouns: "a common noun like *panda* has two functions: first, it is related to a kind, ... and second, it is related to a set (or property)" (p. 66).

One way to capture the dual function of common nouns could be to have two lexical entries for each of them, one being property-related and the other being kind-related. The property-related entry for the noun *köpek* 'dog' is already given in (516). Below is the kind-related entry for the same noun:

(519)




With such lexical lexical entries at our disposal, we could treat kind-referring nominals like the italicised ones in the following examples in a very straightforward manner:

(520) *Köpek kurt-tan* evrimlen-di.
dog wolf-abl evolve-pst
'The dog evolved from the wolf.'

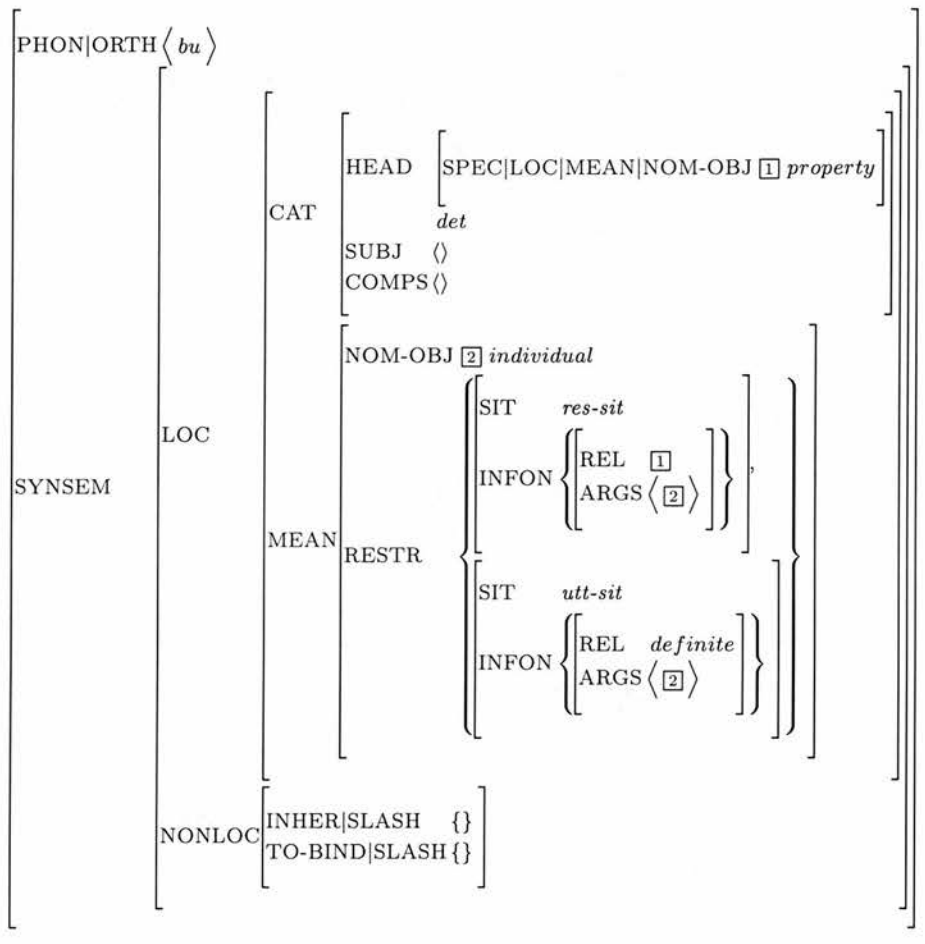
The italicised nominals in this example would instantiate the kind-related entries for *köpek* 'dog' and *kurt* 'wolf'.

However, we should note that the suggested approach is by no means the only possible treatment of kind-referring nominals. A more parsimonious treatment could be to take the property-related entry as semantically primitive and derive the kind-related sign from it by means of a lexical rule. Krifka et al would probably find this second approach preferable, given their position that: "It seems that common nouns in many languages are primarily [property-related] ... and that the kind-referring use has to be marked somehow" (p. 67). As we will ignore the kind-referring use of NPs in the remaining part of our analysis, we will not pursue this issue to any further extent here.

**Determiners:**

We will not give a comprehensive analysis of Turkish determiners. We will only present the lexical entries for the words *bu* 'this' and *bir* 'a'. Our lexical entry for the demonstrative *bu* is as shown in (521):

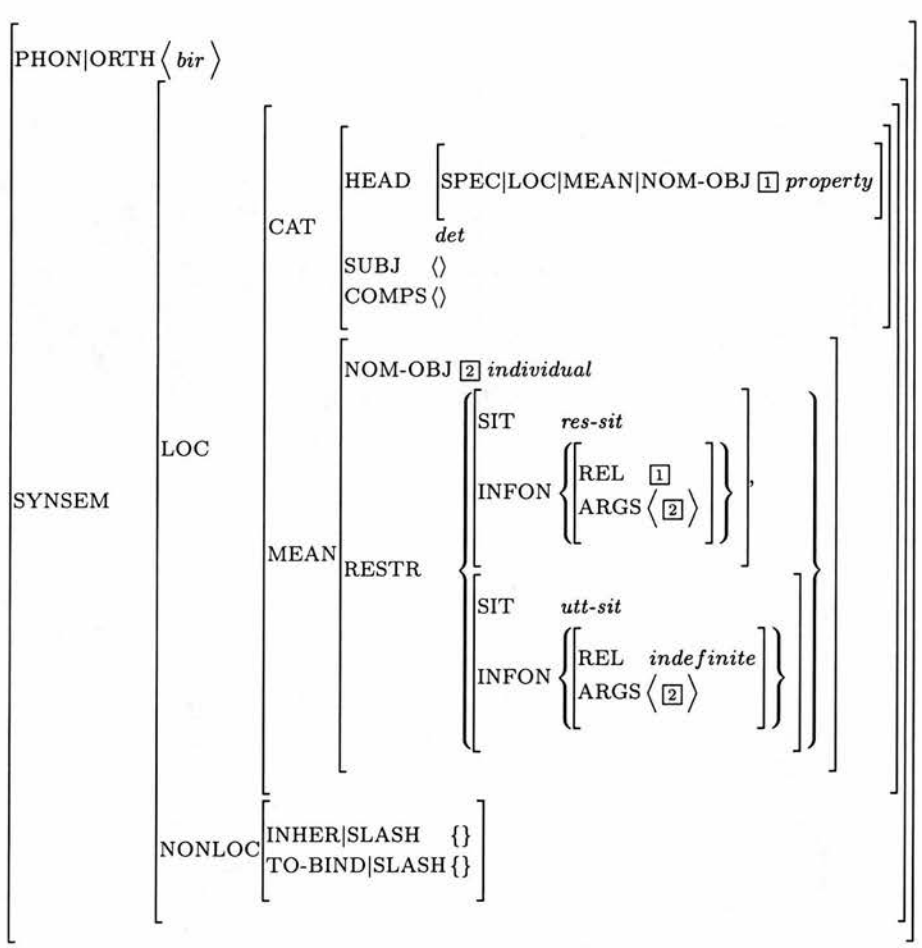
(521)




(521) says that *bu* can select an object whose LOC|MEAN|NOM-OBJ value is of sort *property*. In other words, it can select a common noun. The NOM-OBJ value of the specified object is structure-shared with the REL value of the infon supported by the resource situation. This structure sharing will determine the MEAN value of a noun phrase containing the given determiner.

The lexical entry for *bir* is exactly the same as that of *bu* except that it constrains the referent (or the value of NOM-OBJ) to be indefinite:

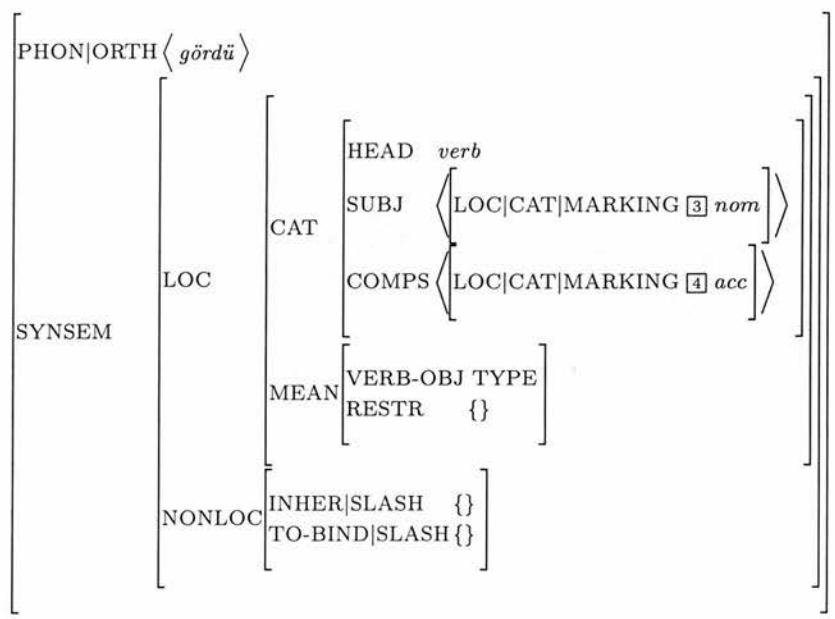
(522)




**Verbs:**

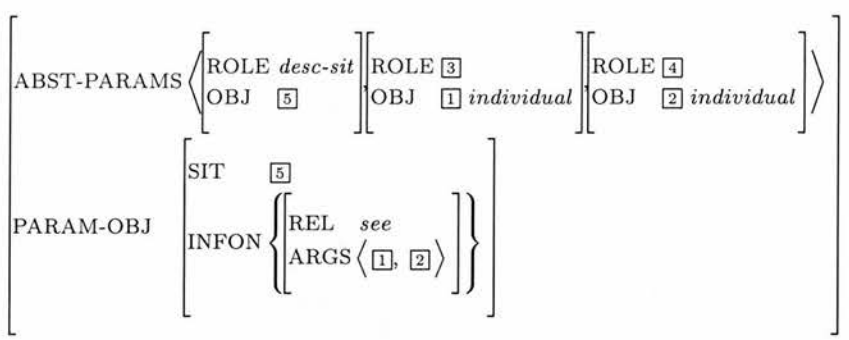
We define the MEAN value of a verb to be a type, where the abstracted parameters are all those that appear in the infon. (523) is the lexical sign for the verb *gördü* 'saw':

(523)




where TYPE is an abbreviation for:

(524)




Notice that the structure-sharing between the valence values and the MEAN value is established through role indices, not parameters. As we already know, types can be either predicated of or applied to a given object (cf. Chapters 5 and 4). In both cases, the correspondence between parameters will depend on the identity of their role indices. The MARKING values in CAT will be used to fix the role indices of an assignment which the MEAN value will be predicated of or be applied to.

### 7.3.3 Case principle

In Section 3.4.2, we saw that Turkish has a Case Principle similar to the Case Filter of GB theory:

(525) CASE FILTER:

*NP, where NP has lexical content but no Case.

Below is the preliminary version of our Case Principle for Turkish:

(526) CASE PRINCIPLE (preliminary version):

The MARKING value of a nominal that serves as a daughter of a phrase must be of sort *marked.*

We take the sort *marking* to have two subsorts: *marked* and *unmarked.* The sort *marked* in turn has the subsorts *nominative (nom), accusative (acc), dative (dat)* and *ablative (abl).*[6]

We argued (in Section 3.4.2) that Turkish nominals receive case in one of the following three ways:

- semantically,
- lexically, and
- structurally.

Semantic case is assigned based on the meaning of the nominal it is assigned to. We saw that in Turkish some temporal expressions (such as *dün* 'yesterday' and *yarın* 'tomorrow') are assigned locative case in that way. Lexical case is assigned on the basis of lexical information. We claimed (in Section 3.4.2) that this is done in accordance with the following principle:

(527) LEXICAL CASE ASSIGNMENT IN TURKISH:

a. Nominals carrying case morphology must receive the case encoded by their case suffix.

b. Nominals not carrying case morphology can receive nominative case.

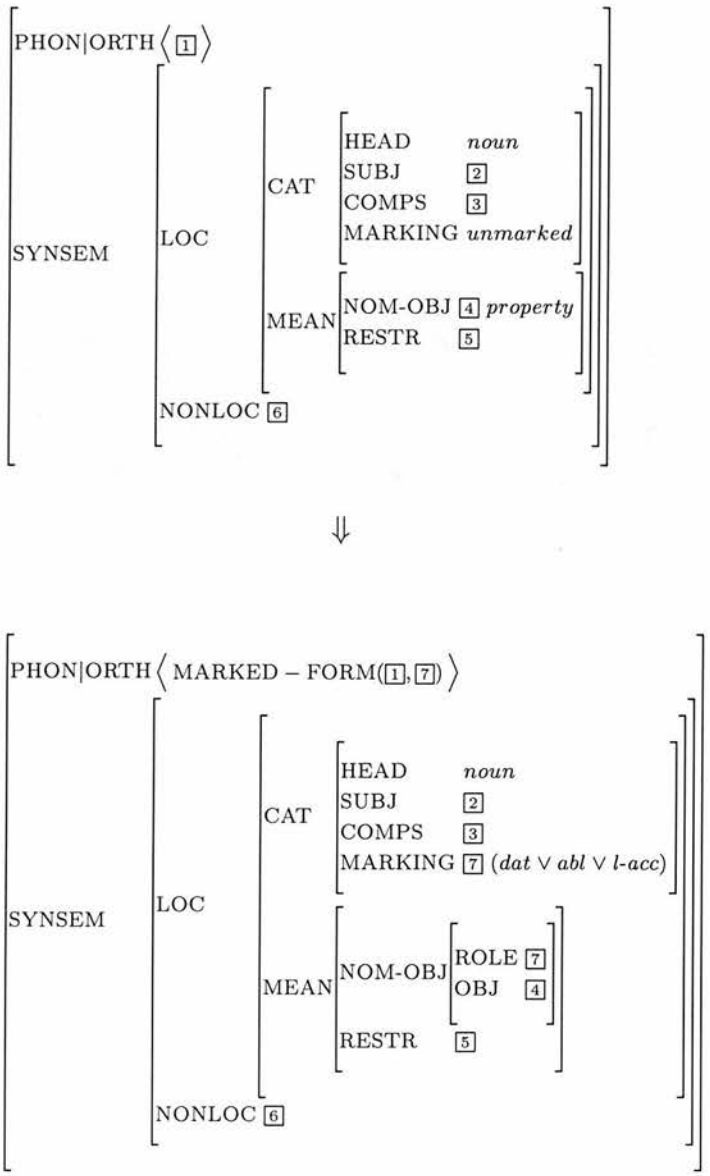
[6]This list could, of course, be extended to include other cases, such as *locative, instrumental* and *genitive.* In our analysis, we will be concerned with only nominative, accusative, dative and ablative marked nominals. Thus, we have the four sorts corresponding to these cases.

Finally, structural case is assigned to a nominal in a particular structural position. We claimed that Turkish nominals can be assigned structural case only if they are adjacent to a lexical head.

We will ignore expressions receiving semantic case. We will now consider each of the other two strategies in turn.

We will implement the principle stated in (527) by means of two lexical rules: one for nominals carrying case morphology and one for nominative marked nominals. (528) shows the lexical rule which we offer to handle the assignment of case by means of case morphology:

(528) CASE-MARKING-VIA-MORPHOLOGY RULE (CMvMR):

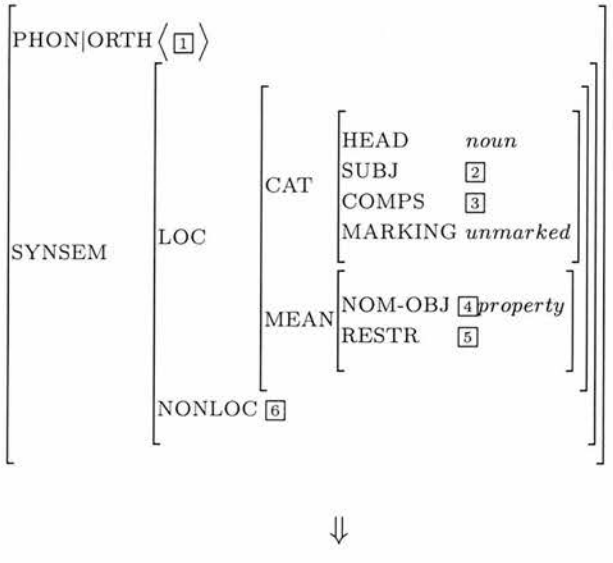


Here, the function MARKED-FORM is assumed to take the phonetic form of an unmarked nominal and a case value, and return as output the phonetic form the nominal will take when assigned the given case value (e.g. MARKED-FORM(*Oya,abl*) = *Oya-dan* and MARKED-FORM(*Oya,dat*) = *Oya-ya*). One point we should note is that we divide the sort *accusative (acc)* into two subsorts: *lexically-accusative (l-acc)* and *structurally-accusative (s-acc)*. The former will be the case value of direct objects receiving their case lexically. For example, the function MARKED-FORM will take *Oya* and *l-acc* as inputs in order to return *Oyayı* (which is the form the nominal will receive when assigned accusative case by means of morphology). The latter will be the case value of direct objects receiving their case structurally.

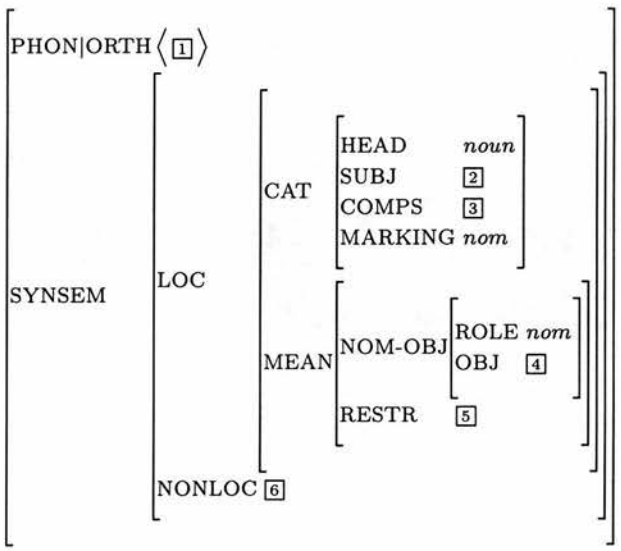
Another change the input feature structure undergoes is that its NOM-OBJ value is transformed to an assignment and, thereby, is associated with a role index. Recall that the abstracted parameters of types that serve as MEANING values of verbs are indexed with case roles. Similarly, we index the NOM-OBJ values of case-marked nominals with their cases. This will ensure that the MEANING value of a verbal head is applied to or predicated of appropriate objects.

Below is the lexical rule which we propose for nominative nominals:

(529) NOMINATIVE MARKING LEXICAL RULE (NMLR):



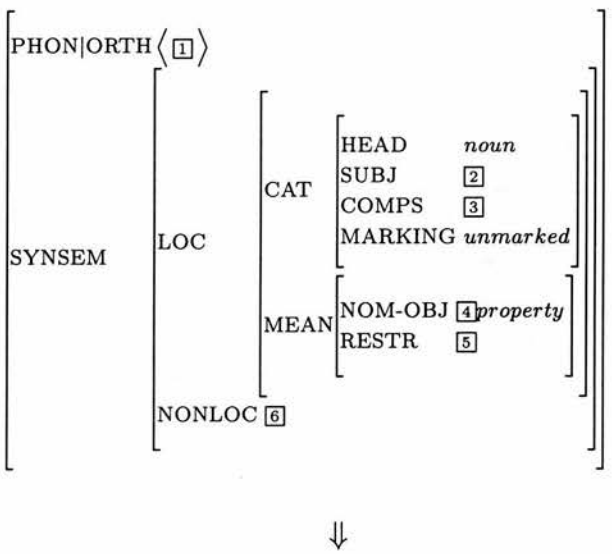

⇓




This lexical rule differs from CMvMR in that the nominal does not undergo any phonetic change.

As for the handling of the structural case assignment, we first propose the following lexical rule:

(530) STRUCTURAL-ACCUSATIVE LEXICAL RULE (SALR):

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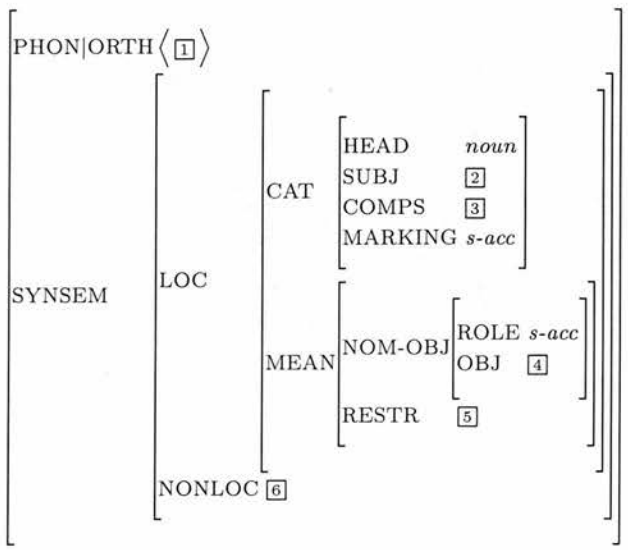



Clearly, our analysis up to this point does not reflect the difference between the lexical assignment of case and the structural assignment of case. Technically, both kinds of case are assigned by means of a lexical rule. However, the difference will show up in the licencing of these assignments. The accusative case assigned by the Structural-Accusative Marking Rule will be licenced only if the nominal is adjacent to a lexical head. On the other hand, the cases assigned by the other lexical rules will not be subject to any structural constraint in order to be licensed. The final version of our Case Principle captures the indicated difference:

(531) CASE PRINCIPLE (final version):

a. The MARKING value of all daughters of a phrase must be of sort *marked.*

b. A nominal whose MARKING value is of sort *s-acc* must be the rightmost element of the list of a COMP-DTRS value.

### 7.3.4 A lexical rule for definiteness

Turkish does not have a definite article. A nominal not having a determiner may display an ambiguity with respect to definiteness, as exemplified below:

(532) Oya-yı *köpek* ısır-dı.
Oya-acc dog bite-pst
'*The dog* bit Oya.'

or

'*A dog/dogs* bit Oya.'

When this sentence is interpreted out of the blue, it may receive either of the readings indicated in the translations. However, this does not mean that any nominal lacking a determiner will display an ambiguity in terms of definiteness. The sentences below are restricted to the indicated readings:

(533) a. Oya *kitab-ı* oku-du.
Oya book-acc read-pst
'Oya read *the book.*'

b. Oya *kitap* oku-du.
Oya book read-pst
'Oya read *a book/books.*'

Such and similar examples might, at first glance, give the impression that Turkish uses a rather complicated strategy to mark the definiteness status of its nominals. Nevertheless, we hold the view that the strategy Turkish uses for this purpose is very simple to formulate. Definiteness marking in Turkish, we argue, can be given a straightforward account by referring to the incorporation phenomenon. Notice that the readings where the italicised NPs do not receive definite interpretations are those that will be treated as cases of incorporation in Turkish: the NPs do not take determiners and they are neutral with respect to number distinction. These readings could be paraphrased, respectively, as: *Oya was dog-bitten* and *Oya book-read.* We propose (534) as the principle of definiteness marking in Turkish:

(534) DEFINITENESS MARKING PRINCIPLE (for Turkish):

a. A non-incorporated nominal with no determiner is interpreted to be definite.

b. A nominal with a determiner receives its status of definiteness from its determiner.

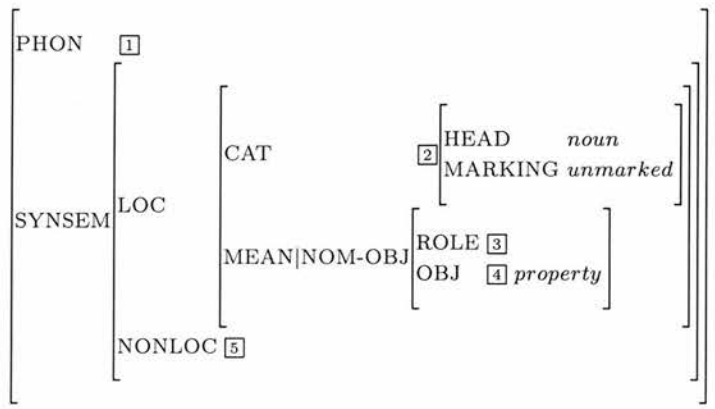
Recall that we characterize definiteness to be a property of discourse referents (cf. Section 2.1). As incorporated nominals do not introduce discourse referents, they cannot be characterised as either definite or indefinite. Some Turkish linguists describe incorporated nominals as *non-definite* (e.g. Dede 1986).

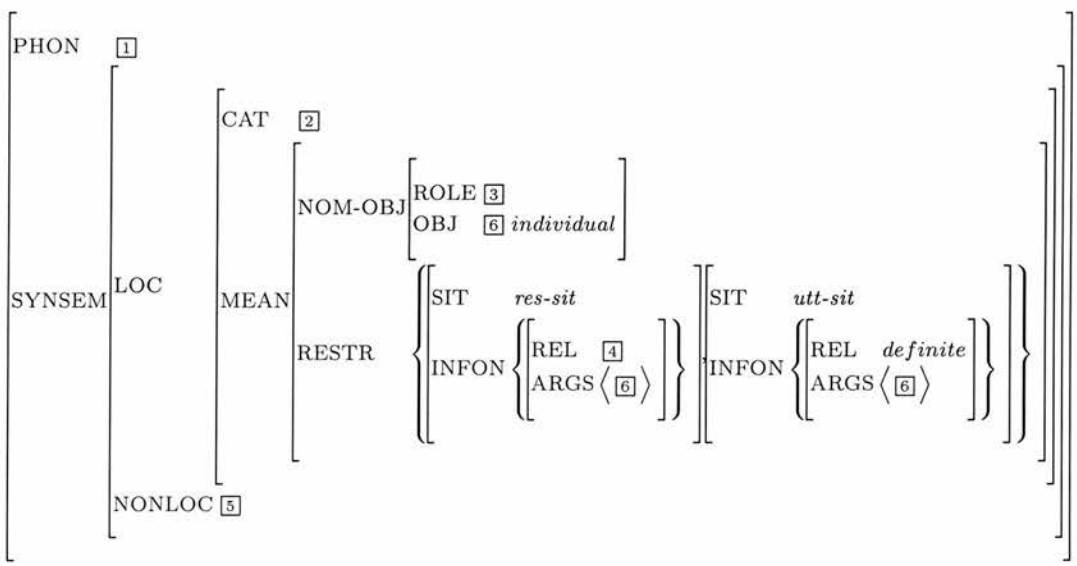
Now, it is easy to see why the examples above receive the indicated interpretations. The italicised nominal in (532) can be interpreted as either incorporated or not. As

it does not take a determiner, on its non-incorporated reading it is interpreted to be definite. The DO in (533a) carries case morphology. Hence, it cannot be interpreted as incorporated (cf. Section 3.4.2). Besides, it lacks a determiner. As a result of these two facts, it is confined to a definite interpretation. Finally, the DO of (533b) can only be interpreted as incorporated into the verb. Thus, it does not have a discourse referent that can be assigned a status in terms of definiteness.

We propose to derive a definite nominal from a common noun by the following lexical rule:

(535) DEFINITE-NOMINAL LEXICAL RULE (DNLR):

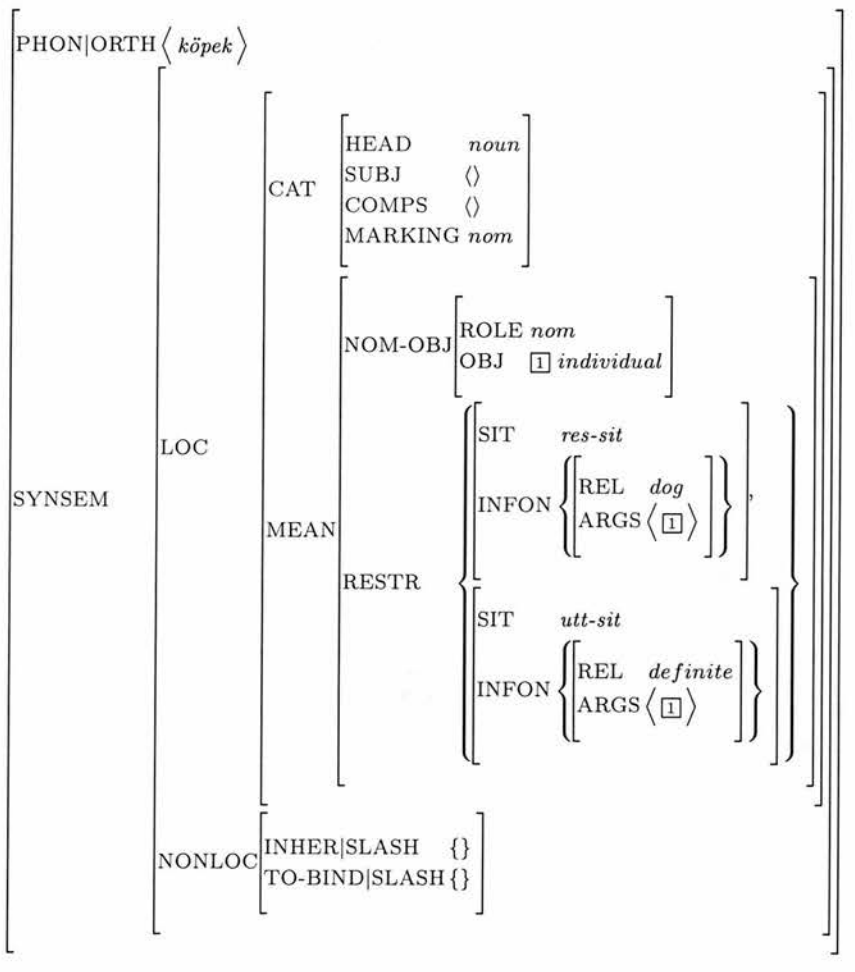



This lexical rule takes as input a noun whose MEAN|NOM-OBJ value is an assignment whose OBJ value is of sort *property* (i.e. a case-marked common noun) and yields

as output a noun whose MEAN|NOM-OBJ value is an assignment whose OBJ value is of sort *individual* and restricted to bear the property provided by the input noun and to be definite (i.e. unambiguously identifiable within a shared set of objects) in a particular occasion of utterance. (536) shows the output that will be yielded by the Definite-Nominal Lexical Rule when given the nominative marked common noun *köpek* 'dog' as input:

(536)




This, for instance, could be the sign for the italicised nominal in the following example:

(537) NE ol-du?
what happen-pst
'What happened?'

*Köpek* OYA-YI ısır-dı.
dog Oya-acc bite-pst
'The dog bit OYA.'

### 7.3.5 Lexical rules for incorporation

While the nominal *köpek* 'dog' is confined to a definite interpretation in example (537), the same nominal is obliged to receive an incorporated reading in the example below:

(538) NE ol-du?
what happen-pst
'What happened?'

Oya-yı KÖPEK ısır-dı.
Oya-acc dog bite-pst

'A dog/dogs bit Oya' or 'Oya was dog-bitten.'

The contrast between the two examples results from the difference between the syntactic positions of the nominals in question. In (537), *köpek* occupies a VP-external and S-internal position.[7] In (538), it occurs in a VP-internal position. As will be remembered from the preceding chapter, there are two crucial constraints that apply to grammatical subjects in Turkish. First, a VP-external and S-internal grammatical subject must be strong. Second, a VP-internal grammatical subject must be weak.[8] As a Turkish nominal lacking a determiner can receive either a definite reading (which is strong) or an incorporated one (which is weak), the nominal *köpek* 'dog' is restricted to a definite interpretation in (537) and an incorporated interpretation in (538). After this short reminder of some key points of our analysis of Turkish, let us now see how we can handle the incorporation phenomenon in our grammar.

In Section 3.4.2, in order to capture the semantic properties of noun incorporation at a representational level, we introduced *compound* relations into our notational system (which was the Extended Kamp Notation), in addition to the *basic* ones. We defined a compound relation as follows:

(539) A compound relation is a binary tuple such that:

a. the second argument is a relation provided by a verb; and

[7]Recall that focal sentence elements occur S-internally in Turkish, and the A-accented complement marks the leftmost boundary of the VP (cf. Chapter 4).

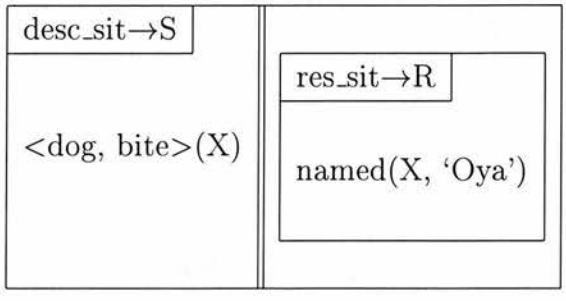
[8]The handling of the second constraint is presented in Section 7.3.7. The first constraint is ignored by our grammar.

b. the first argument is a property provided by a nominal incorporated to that verb.

For example, (540a) is the compound relation corresponding to *dog-biting*, and (540b) is the representation of the response sentence in (538):

(540) a. <dog, bite>

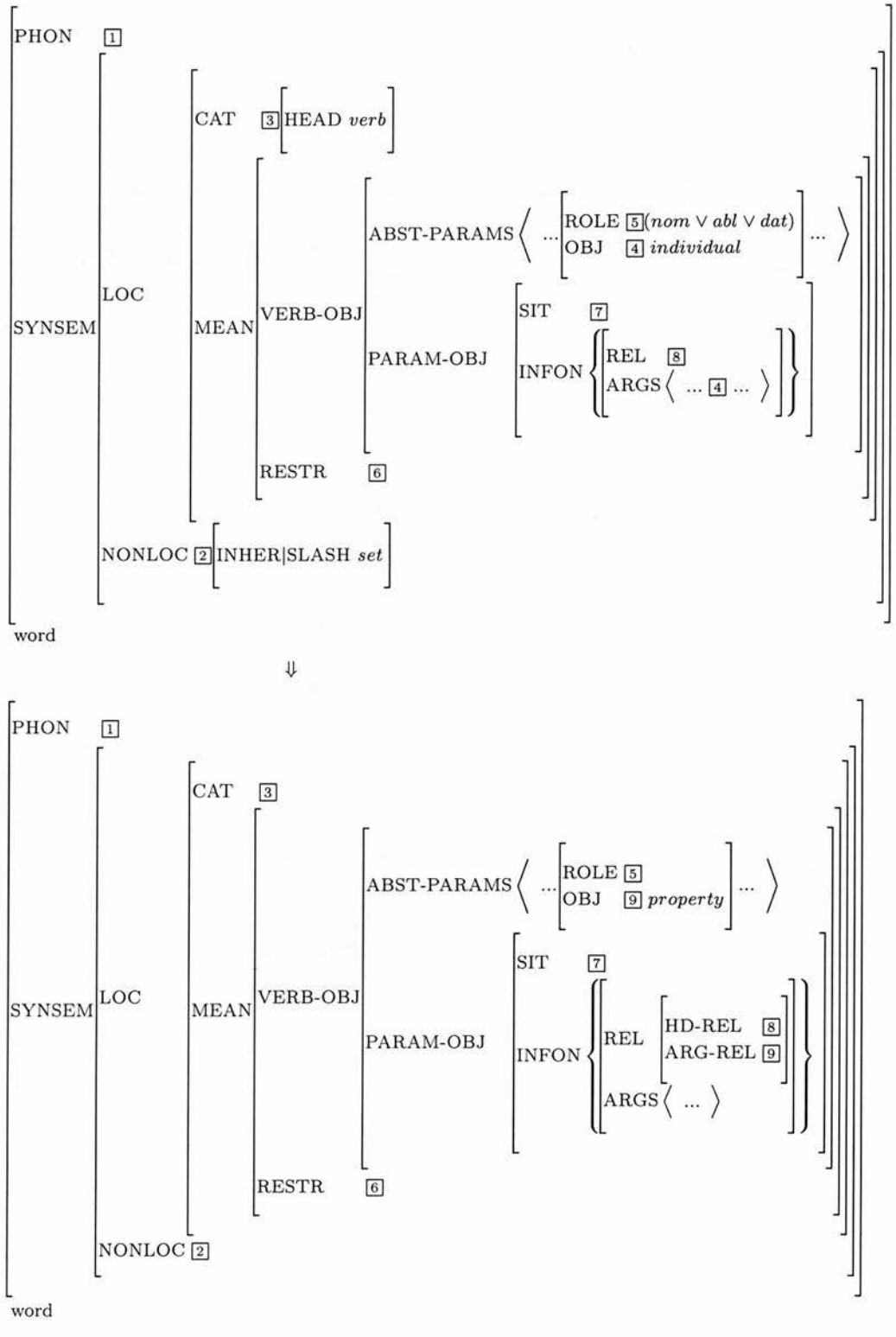
b.




We will use the sorts *simple-relation (simp-rel)* and *compound-relation (comp-rel)* in order to transfer this analysis into our grammar. An object of sort *simp-rel* will be a relation provided by a verb, such as *snore, see, give* etc. A feature structure of sort *comp-rel*, on the other hand, will bear the two features HEAD-RELATION (HD-REL) and ARGUMENT-RELATION (ARG-REL). HD-REL takes values of sort *simp-rel*, and ARG-REL takes values of sort *property*.

Below is one of the lexical rules which we offer in order to derive objects of sort *comp-rel* from verbal lexical entries:

(541) COMPOUND-RELATION LEXICAL RULE 1 (CRLR1):

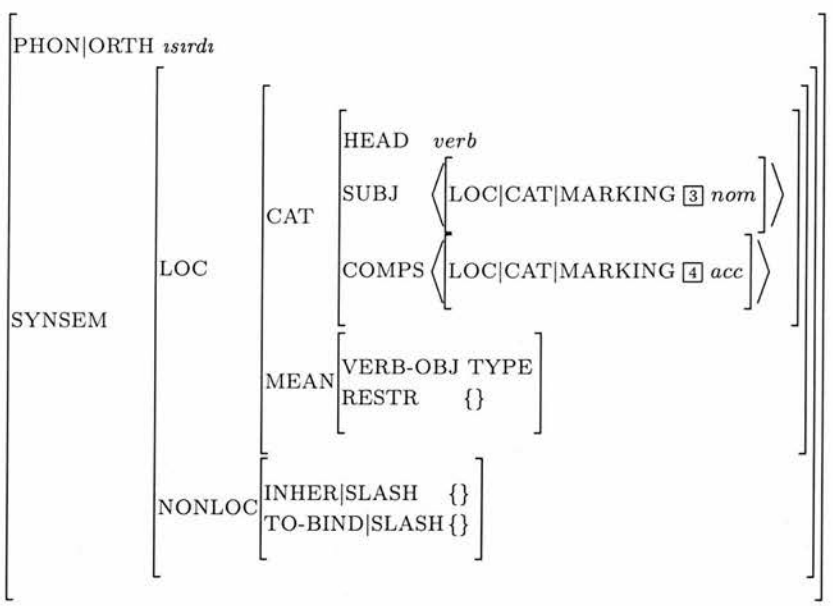



There are several points to note about this rule. First, it takes as input a feature structure of sort *word* for a verb which has not undergone an extraction rule (i.e. whose INHER|SLASH value is an empty set). This stipulation is required in order to

preclude redundancies that might arise from the application of the rule once before an extraction operation and once after it. Second, an element of sort *individual* is removed from the ARGS list and is replaced with an object of sort *property* in the ABST-PARAMS list. Third, the new *property* object will be the one that is to be incorporated into the verb. This is effected by a structure-sharing established between it and the REL|ARG-REL value.

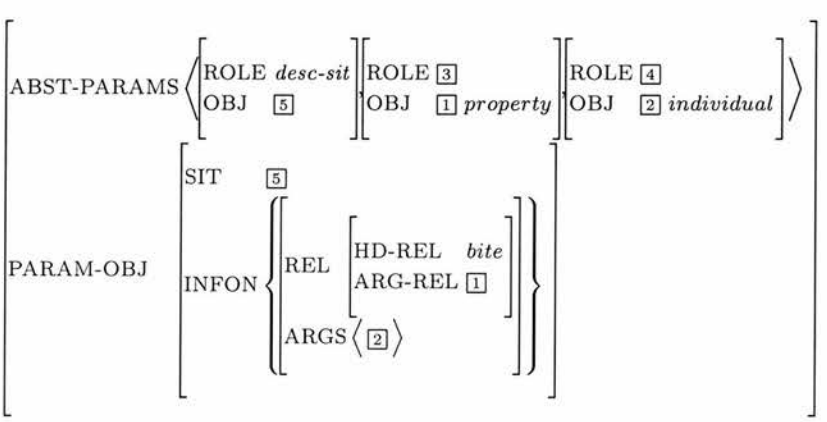
To give an example, one output the Compound-Relation Lexical Rule can yield when applied to the verb *ısırdı* 'bit' is the feature structure in (542):

(542)




where TYPE is an abbreviation for:

(543)




When the MEAN value of this lexical sign is applied to the MEAN values of the nominals in (538), the infon supporting the described situation in the resulting

object will be the following:

(544)
$$\left\{\left[\begin{array}{l}\text{REL}\ \left[\begin{array}{l}\text{HD-REL}\ \ \textit{bite}\\ \text{ARG-REL}\ \textit{dog}\end{array}\right]\\ \text{ARGS}\left\langle\ \textit{individual}\ \right\rangle\end{array}\right]\right\}$$

Which mechanisms are required to analyse phrasal signs will be explored in the subsequent sections. However, before going into that, we would like to touch upon two issues that are handled in the lexicon.

The first issue is about the interaction between the use of accusative morphology and the incorporation phenomenon in Turkish. As will be remembered from Section 3.4.2, incorporated direct objects in Turkish cannot take case morphology, nor can they contain a determiner. The affixation of the accusative suffix to a bare nominal like *elma* 'apple' will make it impossible for it to be interpreted as incorporated in a particular context of use. Consider the following pair of sentences:

(545) a. Oya *şarkı* söyle-di.
Oya song say-pst
'Oya sang *a song/songs*' or 'Oya sang.'

b. Oya *şarkı-yı* söyle-di.
Oya song-acc say-pst
'Oya sang *the song.*'

In (a) the bare nominal is left unspecified with respect to number distinction (cf. the English translation). It is not capable of introducing any discourse-referents. It cannot take an anaphoric pronoun. For instance, the sentence it occurs in cannot be followed by an utterance like (546):

(546) *O-nu* söyle-me-si-ni Kaya iste-di.
it-acc say-inf-poss3-acc Kaya want-pst
'Kaya wanted her to sing it.'

These are all properties of incorporated nominals. The case morphology bearing nominal in (b), on the other hand, is specified in terms of number distinction (it is [+singular]) and, it introduces a definite discourse referent. That is, it is certainly non-incorporated.

Cases other than accusative are neutral with respect to incorporated/non-incorporated distinction. Consider the examples below:

(547) Oya yarın sabah *okul-a* gid-ecek.
Oya tomorrow morning school-dat go-fut
'Oya is going to school tomorrow morning.'

or

'Oya is going to the school tomorrow morning.'

(548) Kaya *hapis-ten* kaç-tı.
Kaya prison-abl escape-pst
'Kaya escaped from prison.'

or

'Kaya escaped from the prison.'

(549) Oya-yı *arı* sok-tu.
Oya-acc bee sting-pst
'Oya was bee-stung.'

or

'The bee stung Oya.'

The italicised nominals in these examples can be interpreted either as incorporated or non-incorporated. In other words, they can be interpreted either as denoting a property that serves to describe a compound relation conceived as a unit (in conjunction with the verb) or as denoting a definite object. For instance, on the latter readings of the nominals (i.e. on the non-incorporated readings) the propositions intended to be conveyed by the sentences in (547)-(549) could be equivalent to those expressed below, respectively:

(550) Oya is going to the old abandoned school tomorrow morning.

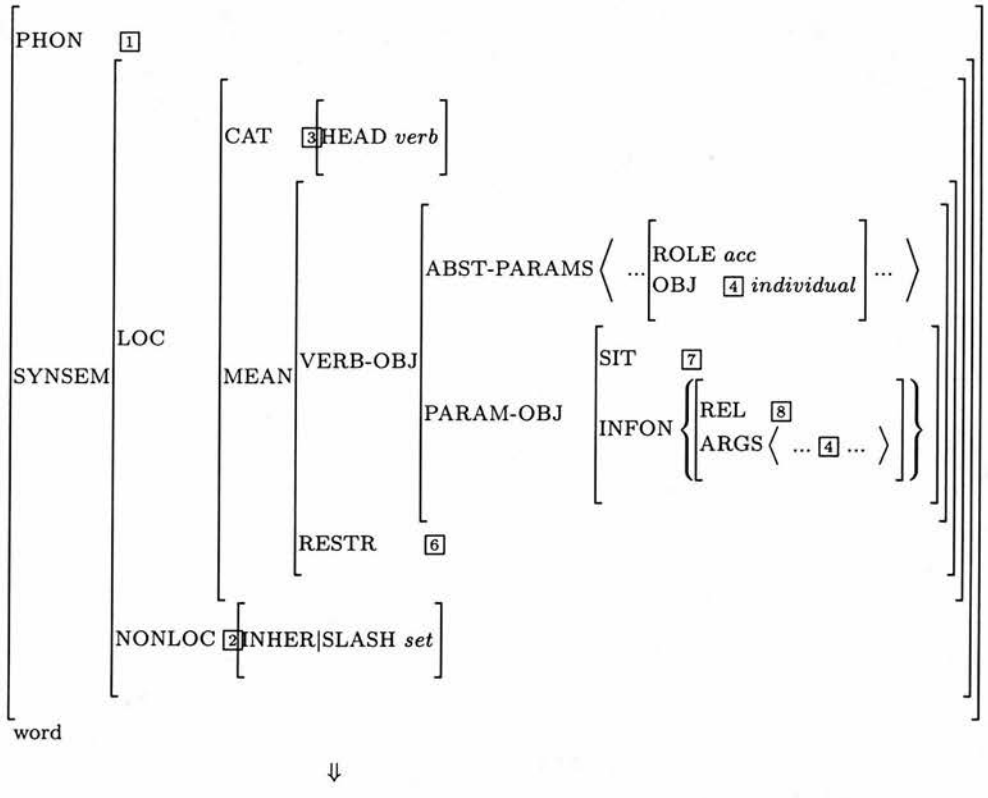
(551) John escaped from the prison built for dangerous criminals last year.

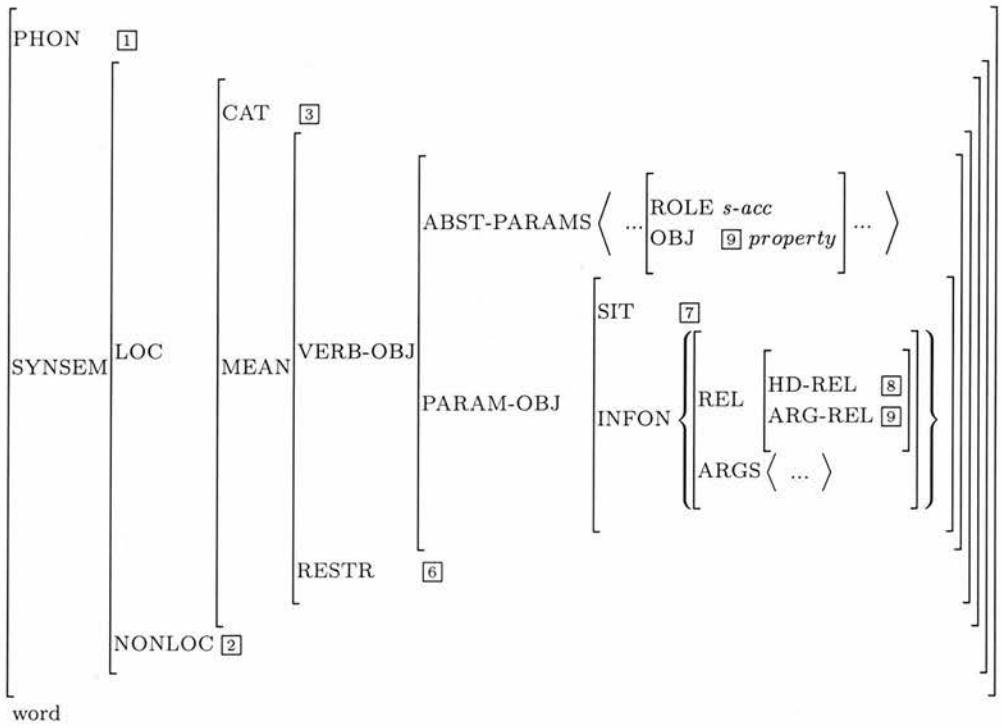
(552) The bee she was trying to catch stung Oya.

In order to capture the indicated difference between accusative and non-accusative marked nominals, we propose to have two distinct lexical rules for noun incorporation in Turkish. The one for non-accusative nominals has already been given. Notice that the input to our first Compound-Relation Lexical Rule is constrained to be

either nominative or ablative or dative marked. Below is our second Compound-Relation Lexical Rule, which will yield verbal signs appropriate for the incorporation of objects without case morphology:

(553) COMPOUND-RELATION LEXICAL RULE 2 (CRLR2):






The output is constrained to be a structurally accusative-marked nominal. This will ensure that the incorporated object will not carry case morphology, as structural case is only assigned to nominals without case morphology.

Finally, we will make a brief remark on the handling of definitiness marking in our grammar. According to the DEFINITINESS MARKING PRINCIPLE, which we introduced in the preceding subsection, a non-incorporated nominal with no determiner is interpreted to be definite in Turkish. Our grammar is also able to deal with this principle. Proper names are by definition definite and this is directly specified in their lexical entries. Common nouns, on the other hand, are specified as property-denoting (via the NOM-OBJ feature), i.e. as nominals to be incorporated into the verb. The only operation that can change the property-denoting status of a noun is the Definite-Nominal Lexical Rule (DNLR) (which is formulated in (535)). Thus a nominal with no determiner will be able to serve as a non-incorporated daughter of a phrase only after being specified as definite by the DNLR.

### 7.3.6 Schemata

In this section, we will analyse certain sorts of Turkish phrase structures in terms of their configurations of immediate constituency. That is, we will be concerned with

the question of which ID schemata licence them. The expressions which we will examine consist of NPs with determiners like *bir köpek* 'a dog' and simple sentences such as *Fido Oyayı ısırdı* 'Fido bit Oya'. Let us start with NPs.

**NPs:**

As will be recalled, in P&S-94 an NP with a determiner is licensed with the Specifier-Head Schema. This schema places a two-way restriction on the phrase: the specifier selects its head (via the SPEC feature), and the head selects its specifier (via the SPR feature). As discussed in Section 7.2, the second part of this restriction does not seem to apply to Turkish NPs. We have assumed that signs for Turkish nominals do not contain the SPR feature. Under these assumptions, we postulate the following language-particular ID schema:

(554) HEAD-SPECIFIER SCHEMA FOR TURKISH:

A phrase with DTRS value of sort *head-spr-struc* whose specifier daughter's SPEC value is token-identical to the SYNSEM value of the head daughter.

For instance, (a partial description of) the sign for *bir köpek* 'a dog' will be as shown in (555):

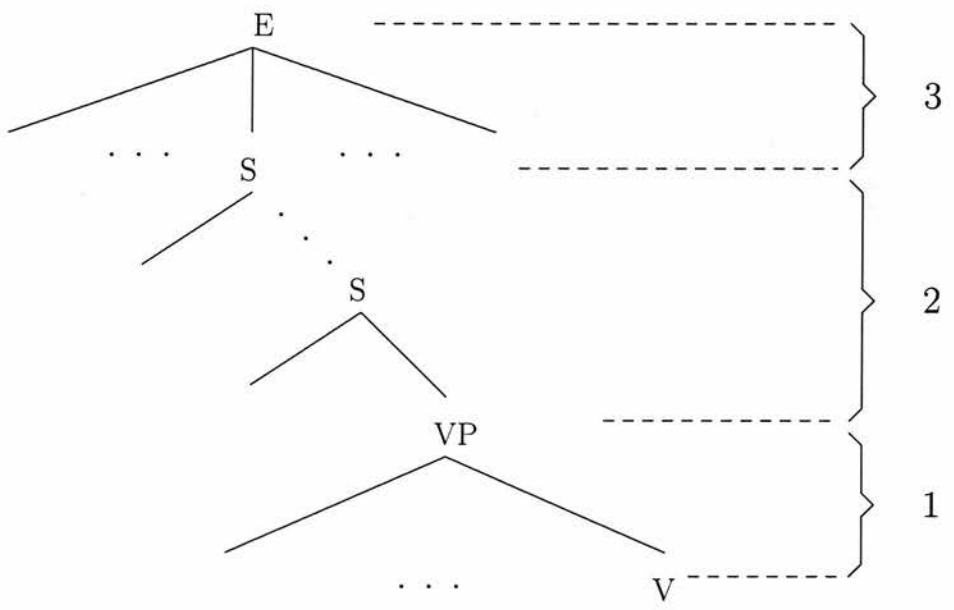
(555)

$$\left[\begin{array}{ll} \text{PHON|ORTH} & \langle \boxed{1}, \boxed{2} \rangle \\ \text{SYNSEM|LOC|CAT} & \left[\begin{array}{ll} \text{HEAD} & \boxed{4} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{array}\right] \\ \text{DTRS} & \left[\begin{array}{ll} \text{SPR-DTR} & \left[\begin{array}{ll} \text{PHON|ORTH} & \langle \boxed{1}\ \textit{bir} \rangle \\ \text{SYNSEM|LOC|CAT} & \left[\begin{array}{ll} \text{HEAD|SPEC} & \boxed{3} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{array}\right] \end{array}\right] \\ \text{HEAD-DTR} & \left[\begin{array}{ll} \text{PHON|ORTH} & \langle \boxed{2}\ \textit{köpek} \rangle \\ \text{SYNSEM|}\boxed{3}\text{ LOC|CAT} & \left[\begin{array}{ll} \text{HEAD} & \boxed{4}\ \textit{noun} \\ \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{array}\right] \end{array}\right] \end{array}\right] \end{array}\right]$$

**Sentences:**

In Chapter 4, we posited the following as the skeletal structure of Turkish sentences:

(556)

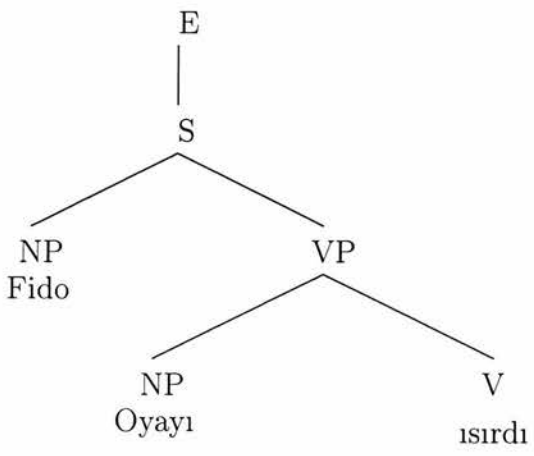



We propose that the parts labelled **1** and **2** are licensed, respectively, by the Head-Subject-Complement Schema and Head-Filler Schema, and the part labelled **3** by the Headless-E Schema, which we introduce as a new ID schema. Let us first consider parts **1** and **2** in the light of examples with all-focus sentences:

(557) Parti-de ilginç birşey OL-DU mu?
party-loc interesting anything happen-pst Q
'Did anything interesting happen at the party?'

(558) a. [$_F$ Fido OYA-YI ısır-dı].
Fido Oya-acc bite-pst
'Fido bit Oya.'

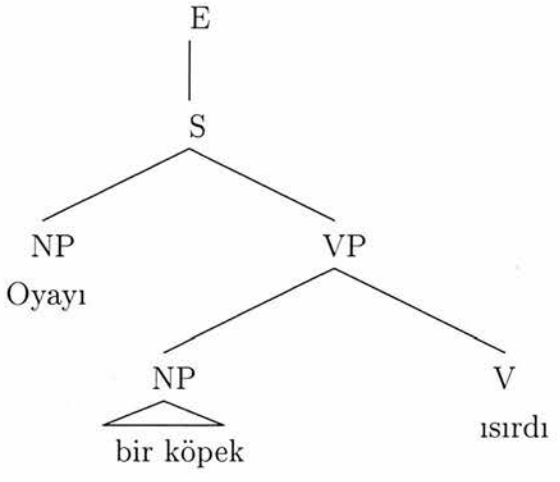
b.



As will be remembered from Chapter 4, when uttered as an all-focus sentence (e.g. as an answer to the question in (557)), a sentence like (558a) is assigned the phrase structure in (558b). Given the parallel between this phrase structure and that of English sentence structure, one might be tempted to argue that the S and VP nodes are licensed by the Head-Subject and Head-Complement schemata, respectively. However, as discussed in detail in Section 4.2.4, this parallel is illusory. Turkish may have VP-internal subjects, as illustrated in the following example:

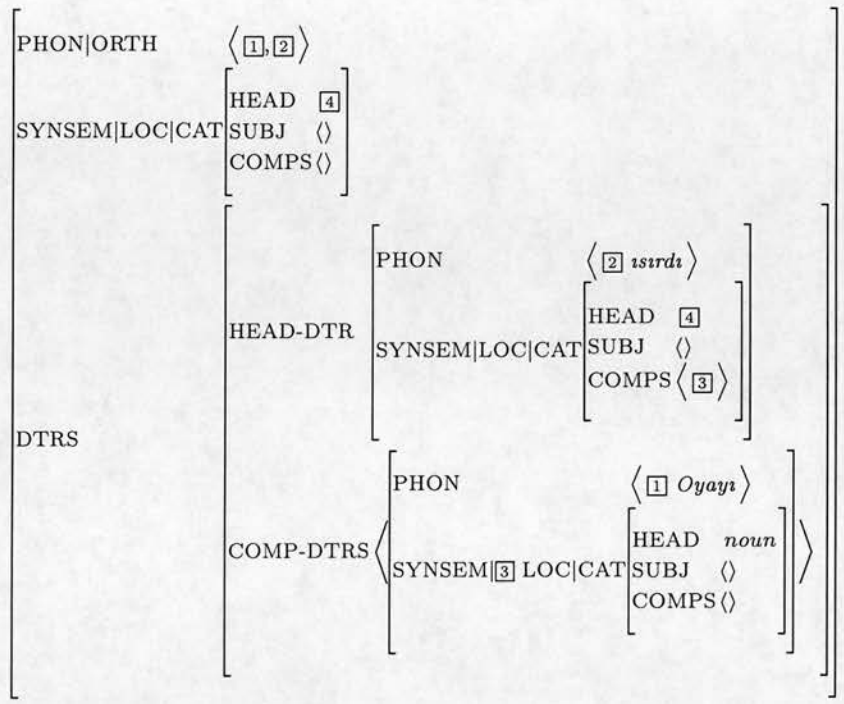
(559) a. [$_F$ Oya-yı bir KÖPEK ısır-dı].
Oya-acc one dog bite-pst
'A dog bit Oya'
(e.g. as an answer to (557))

b.

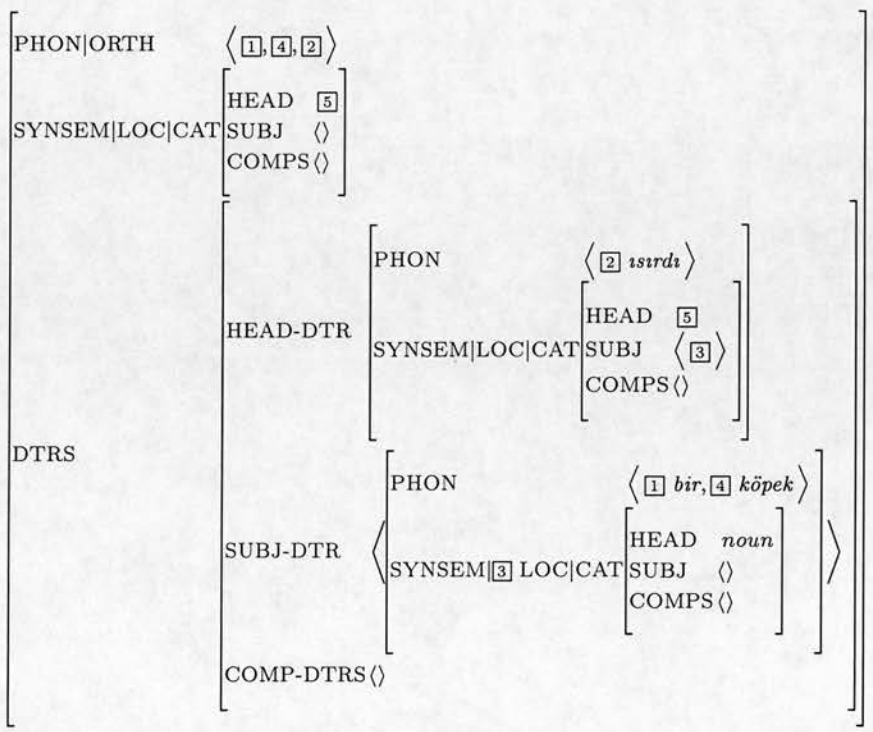



Our proposal is that VPs in Turkish are licenced by the Head-Subject-Complement Schema, which describes saturated phrases with DTRS value of sort *head-subj-comp-struc* in which the head daughter is a lexical sign (cf. Section 7.1.3). (560) and (561) show the signs for the VPs in (558) and (559), respectively:

(560)

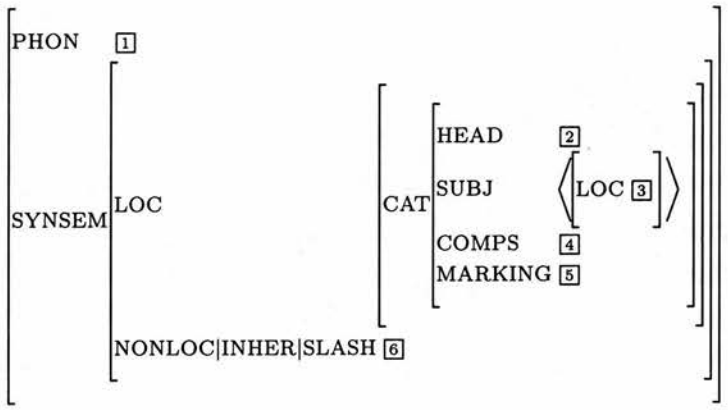



(561)




The head daughter in (560) has a valence value only for its COMPS feature, and the one in (561) has a valence value only for its SUBJ feature. The subject of the former and the object of the latter have already been slashed by the Subject Extraction Lexical Rule and Complement Extraction Lexical Rule, respectively. (562) and (563) show these two rules:

(562) SUBJECT EXTRACTION LEXICAL RULE (SELR):

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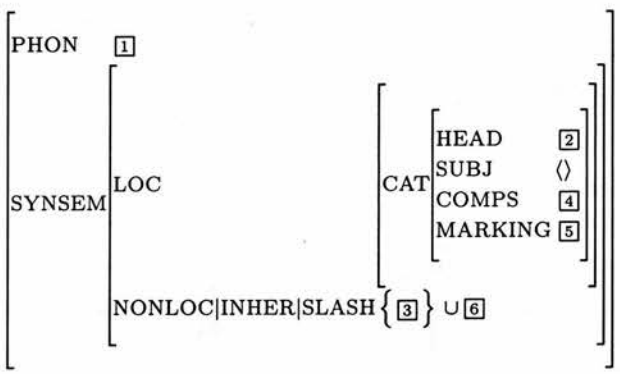
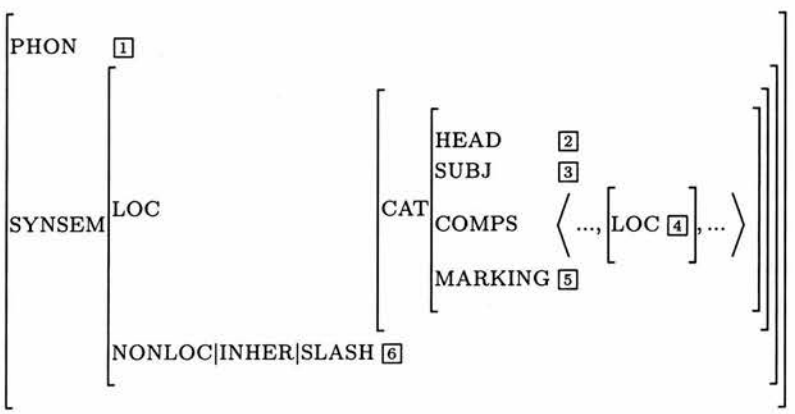



(563) COMPLEMENT EXTRACTION LEXICAL RULE (CELR):

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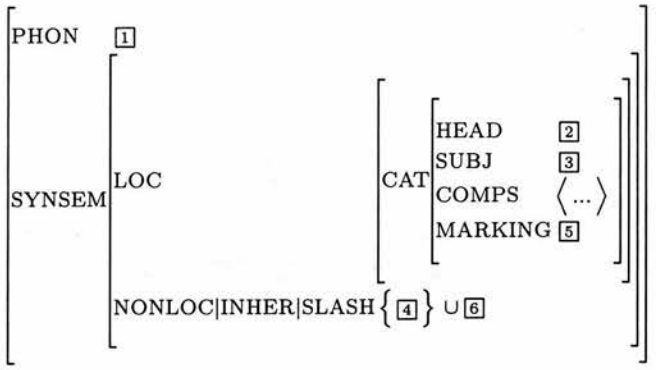
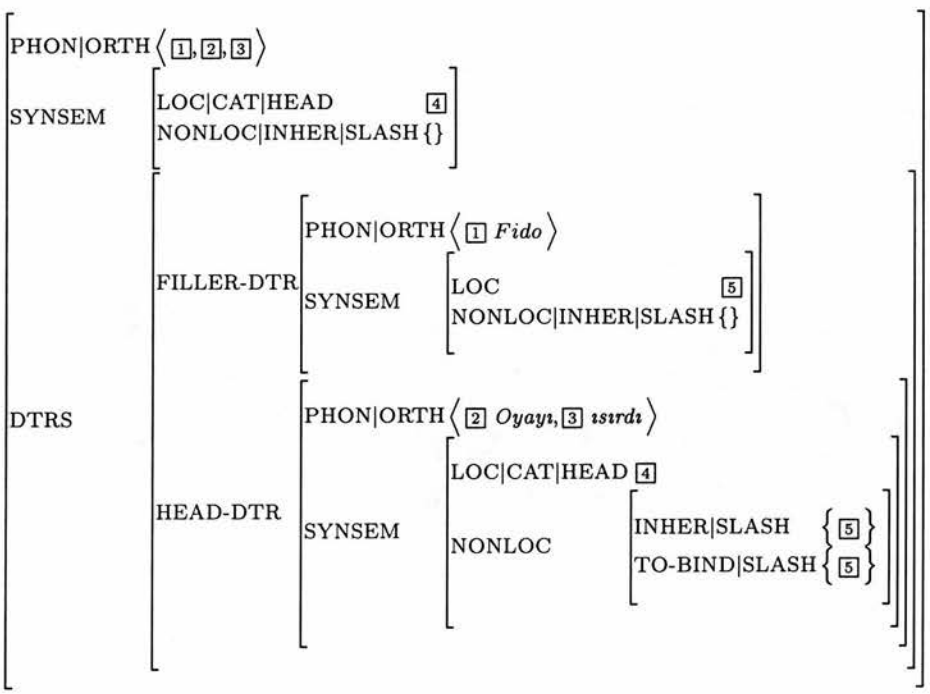
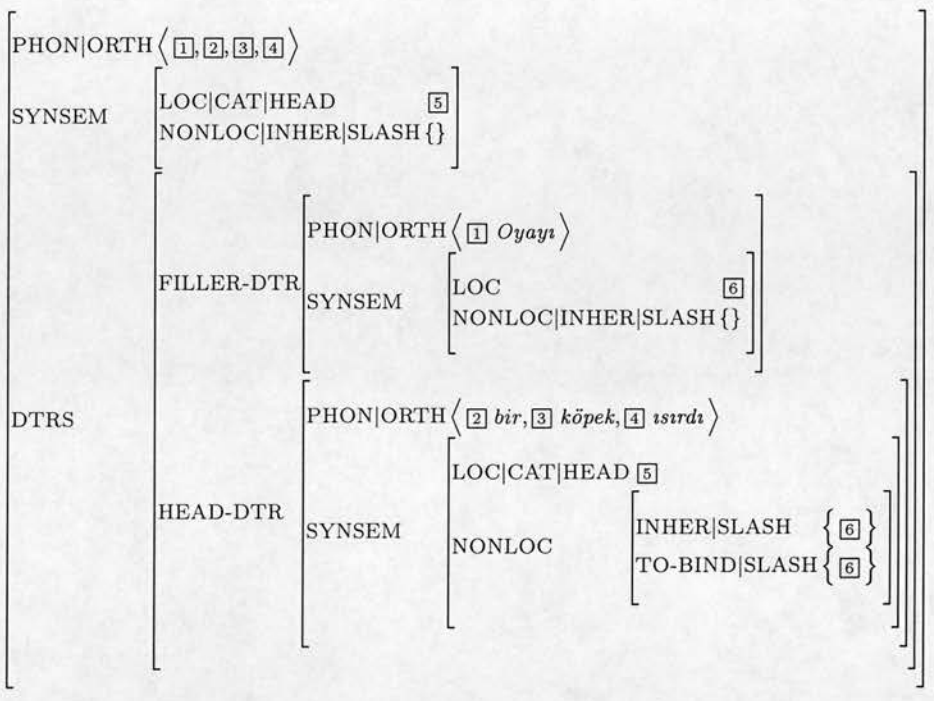



As for S nodes, we suggest that they are licenced by the Head-Filler Schema. The proposed structures for (558a) and (559a) are respectively shown in (564) and (565):

(564)



(565)




Finally, we will propose a schema that licences E nodes. Consider the example in (566):

(566) Oya-yı NE ısır-dı?
Oya-acc what bite-pst
'What bit Oya?'

a. [$_E$ Oya-yı [$_S$ bir KÖPEK ısır-dı]].
Oya-acc one dog bite-pst
'A dog bit Oya.'

b. [$_E$ [$_S$ bir KÖPEK ısır-dı] Oya-yı].
one dog bite-pst Oya-acc
'A dog bit Oya.'

In Chapter 4, we saw that E nodes may have three kinds of daughters. First of all, they all have an S daughter. Secondly, they may have daughters that appear before the S daughter (e.g. (566a)). Thirdly, they may have daughters that appear after the S daughter (e.g. (566b)). In order to deal with the constituent structure of E nodes, we introduce a new subsort of *constituent-structure* called *leftdaughters-s-rightdaughters-structure (leftdtrs-s-rightdtrs-struc)*. Objects of this sort will have the following form:

(567)

| | |
|---|---|
| LEFT-DTRS | (list of phrases) |
| S-DTR | *phrase* |
| RIGHT-DTRS | (list of phrases) |

Now, we propose to introduce a new schema called E-SCHEMA:

(568) E-SCHEMA: a phrase with DTRS value of sort *leftdtrs-s-rightdtrs-struc* in which the S-DTR value is a verbal phrase.

Before exemplifying this schema, we need to clarify another point. Recall that E is an anomalous projection (cf. 4.2.3). As King (1993) puts it, "the E projection does not conform to the usual $\bar{X}$ schema: there is no head, no specifier" (p. 99). In order to capture the exceptional status of Es, we suggest to split the sort *category* into two subsorts: *expression (e)* and *non-expression (non-e)*, where we use the term 'expression' in the sense that Banfield (1982) uses it (cf. Chapter 4). The former is an atomic sort, and the latter is the same as the old *category* sort.

In the light of these characterisations, we analyse sentence (566a) as follows:

(569)

| | | | | |
|---|---|---|---|---|
| PHON\|ORTH | ⟨ 1, 2, 3, 4 ⟩ | | | |
| SYNSEM | LOC\|CAT | *expression* | | |
| | NONLOC\|INHER\|SLASH | {} | | |
| DTRS | LEFT-DTRS | PHON\|ORTH | ⟨ 1 *Oyayı* ⟩ | |
| | | SYNSEM | LOC | 5 |
| | | | NONLOC\|INHER\|SLASH | {} |
| | S-DTR | PHON\|ORTH | ⟨ 2 *bir*, 3 *köpek*, 4 *ısırdı* ⟩ | |
| | | SYNSEM | LOC\|CAT | HEAD *verb* |
| | | | | SUBJ ⟨⟩ |
| | | | | COMPS ⟨⟩ |
| | | | NONLOC | INHER\|SLASH { 5 } |
| | | | | TO-BIND\|SLASH { 5 } |
| | RIGHT-DTRS | ⟨⟩ | | |

The analysis of sentence (566b) will be exactly the same except that the LEFT-DTRS and RIGHT-DTRS values will be interchanged.

Notice that the INHER|SLASH value of S-DTR is bound off at the given node. Recall that P&S-94 state the Nonlocal Feature Principle as follows:

(570) NONLOCAL FEATURE PRINCIPLE:

For each nonlocal feature, the INHERITED value on the mother is the union of the INHERITED values on the daughters minus TO-BIND value on the head daughter.

That is, they assume that the binding of a nonlocal dependency is always declared on the head daughter of the structure in question. However, we take phrases of sort *expression* to be headless. Therefore, in order to capture the binding of nonlocal dependencies at the E node, we need to relax P&S-94's assumption and modify the NFP as follows:

(571) NONLOCAL FEATURE PRINCIPLE (modified version):

For each nonlocal feature, the INHERITED value on the mother is the union of the INHERITED values on the daughters minus the TO-BIND value either on the head daughter or on S-DTR.

Having seen the configurational analysis of some Turkish phrases in terms of ID schemata, we will now present a language-particular principle that applies to these schemata.

### 7.3.7 Information Structuring Principle

In this section, we will propose a principle in order to handle the structuring of information in Turkish. We will call it the *Information Structuring Principle (ISP)*. This principle can be thought of as the counterpart of P&S-94's Semantics Principle in our grammar. It differs from the Semantics Principle in several respects, however. First, it is not intended to provide an account of quantificational issues. Thus it does not have a component corresponding to the Quantifier Inheritance Principle, for instance. Second, it is confined to the treatment of complements. Adjuncts are neglected. So, we do not need changes in our formulation for adjuncts. Third, the informational content of the sentence is not analysed as a mere collection of

information pieces (that determine the type of situation described) but as a unit structured in terms of background-focus and topic-comment dichotomies. That is, the proposed principle integrates information structure into our grammar. Hence, it is dubbed 'the Information Structuring Principle.'[9] Fourth, the ISP aims to express the mutual constraints on interpretation, syntax and phonology, not only the interaction between the first two levels (as in the Semantics Principle). This is a direct result of the third property of our principle, i.e. the result of the fact that the ISP is intended to deal with information structuring, which heavily relies on phonological information.

Before going into the explication of our Information Structuring Principle, let us first remember the framework which we offered in Chapters 4 and 5 to analyse the focus-background and topic-comment articulations of sentences. In most general terms, we take the focus of a sentence to be what is discourse-pragmatically most relevant and the topic to be what the sentence is about. We use the question- and topic-tests to identify foci and topics. According to the question-test, the focus of a (declarative) sentence is that part of it that provides the answer it seems to respond in a particular context. The idea underlying topic tests is that a sentence element, say X, serves as the topic, if the utterance of its sentence can be an appropriate reply to a possible request like 'Tell me about X' or 'What about X?'. (572b) shows the information structure a sentence will receive when uttered as an answer to the questions in (572a):

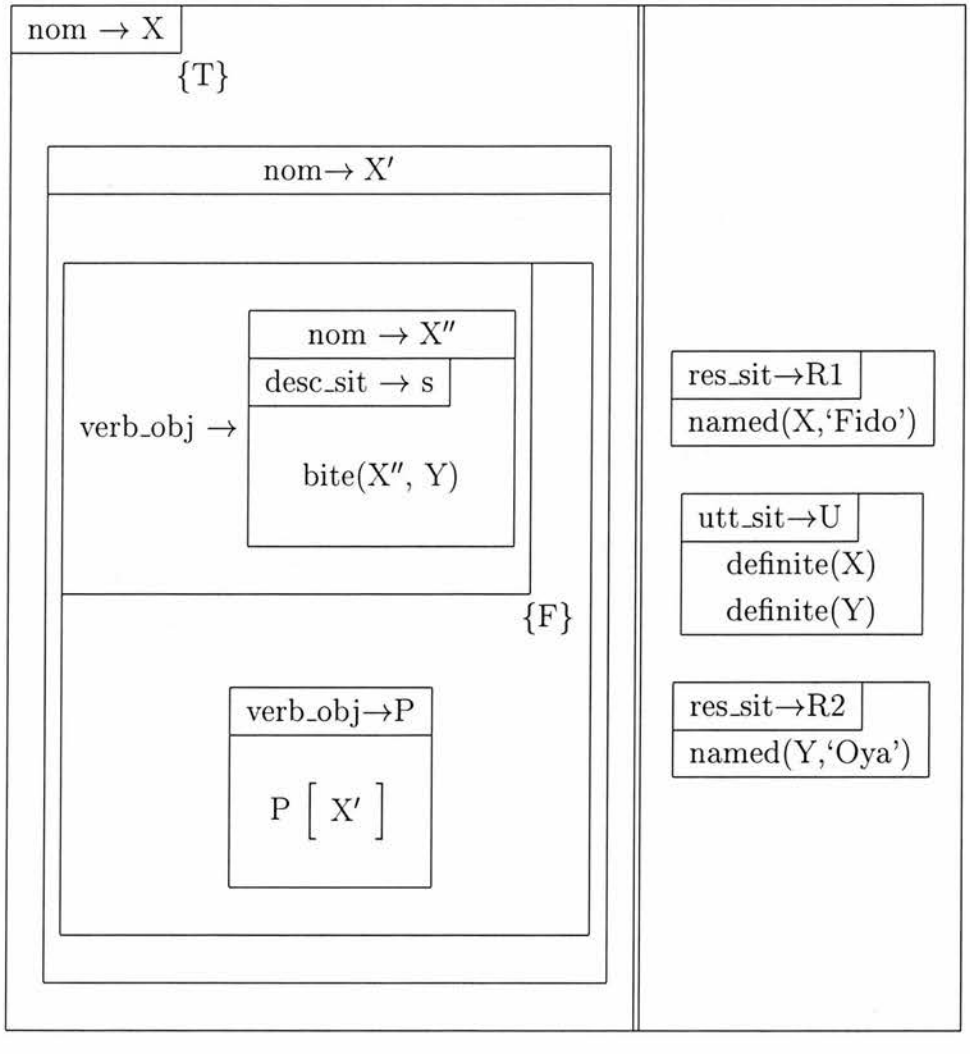
[9]At this point, we would like to mention a particular proposal about the integration of information structure into grammar. Vallduví & Engdahl (1994) propose an integration of information structure into grammar using the HPSG formalism. In their account, the informational content of the sentence and the structuring of this content in terms of notions like focus and topic are kept apart. The former is simply the CONTENT value of the sign (as in P&S-94). For the latter, they propose to enrich CONTEXT with a feature called INFO-STRUCT. INFO-STRUCT information is divided into FOCUS and GROUND features, where the latter is further divided into LINK and TAIL. As will be remembered from Section 6.2.1, this is the feature-structural expression of Vallduví's (1990) trinomial hierarchical articulation, where the link corresponds to what we call the topic and the tail consists of non-topical background elements. The value of each of these new features is instantiated, through structure sharing, with the constituent that plays the respective informational role (e.g. focus, topic). In our analysis, we do not separate the information-structure information from the information itself. The structured meaning approach lends itself very well to expressing the informational content of the sentence along with the structuring of this content. For other approaches to the integration of information structure into grammar see, for instance, Steedman (1991) (who uses a Combinatory Categorial Grammar), Bird (1991) (who uses a Unification Categorial Grammar), and Vallduví (1990) (who uses a GB-multiple level architexture). See also Hoffman (1995) for an application of Vallduví & Engdahl's (1994) approach to Turkish using a Combinatory Categorial Grammar.

(572) a. Fido-dan NE haber? O NE yap-tı?
Fido-abl what news it what do-pst
'What about Fido? What did it do?'

b. [$_T$ Fido] [$_F$ OYA-YI ısır-dı].
Fido Oya-acc bite-pst
'[$_T$ Fido] [$_F$ bit Oya]'.

In our account, the response sentence above will be assigned the following meaning representation:

(573)



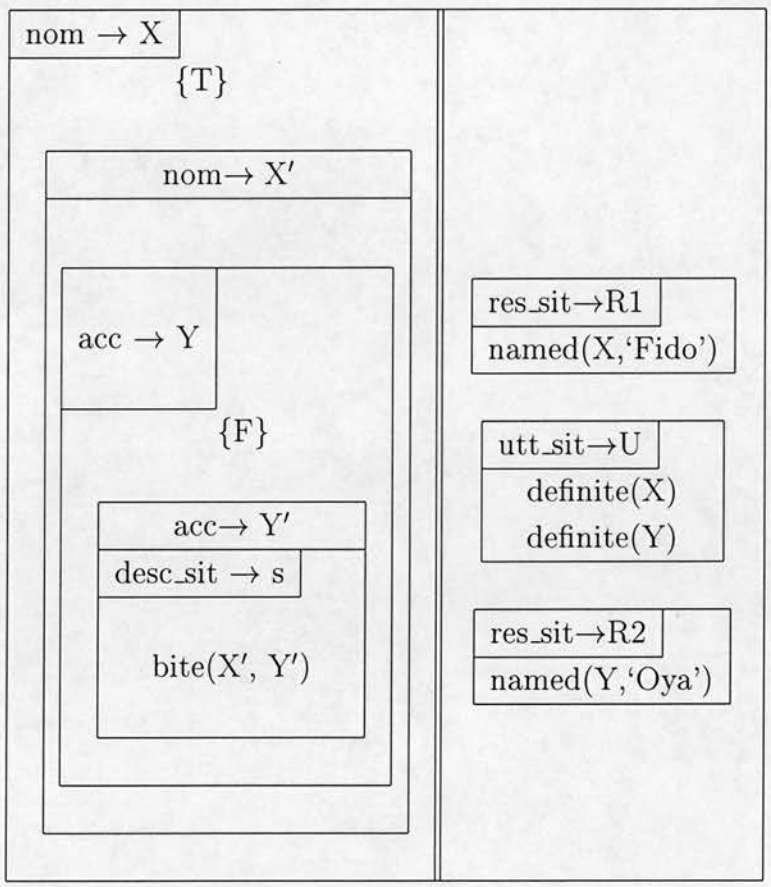

In this example, the focus is the VP of the sentence. Thus, the semantic object denoted by the VP is abstracted away as the focus part of the representation. Below is another example, where the topic is the same as the one above but the focus is a nominal one:

(574) a. Fido-dan NE haber? O KIM-I ısır-dı?
Fido-abl what news it who-acc bite-pst
'What about Fido? Who did it bite?'

b. [$_T$ Fido] [$_F$ OYA-YI] ısır-dı.
Fido Oya-acc bite-pst
'[$_T$ Fido] bit [$_F$ Oya]'.

(575) shows the meaning representation we will assign to (574b):

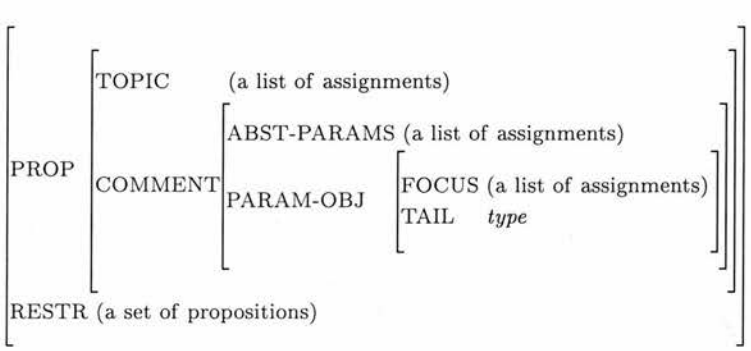
(575)




Here both of the objects denoted by the nominal constituents are abstracted away and predicated of the remaining representation, one as the topic and the other as the focus.

After this short reminder of our account of focus and topic, we can now start to present our Information Structuring Principle. The ISP will have a separate part for each schema discussed in Section 7.3.5. That is, it will consist of four parts. The implementation of this principle will yield a restricted Russellian proposition of the following form for a given sentence:

(576)




Let us start with the part of the ISP related to the Subj-Comps-Head Schema.

**Part#1 of the ISP:**

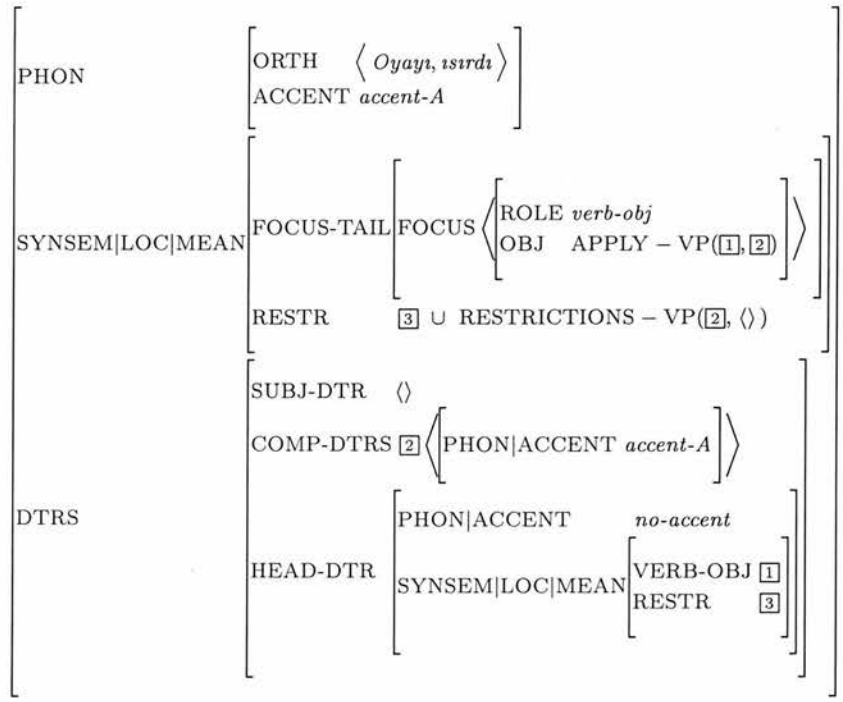
In Section 4.2.4, we put forward the following principle to account for the phonological realisation of verbal foci in Turkish:

(577) THE MARKING OF VERBAL FOCUS IN TURKISH:

In Turkish, in order for a sentence to be able to receive an interpretation where the focus is verbal the focal stress and accent must be placed on the first non-empty complement that occupies the leftmost boundary of the VP.

This was postulated as a working principle, and it allowed us to account for many facts in Turkish. We can easily incorporate this principle into our grammar. The VP will be a phrase whose DTRS value is of sort *head-subject-complement-structure*. The leftmost complement will be the first element in the list obtained by concatenating the SUBJ-DTR and COMP-DTRS lists. As we have adopted a 'traceless' account of Unbounded Dependency Constructions, we do not need to use the notion of empty category. (578) shows the aspects of the analysis of the VP *Oyayı ısırdı* 'bit Oya' in (572b) which are relevant to our discussion:

(578)

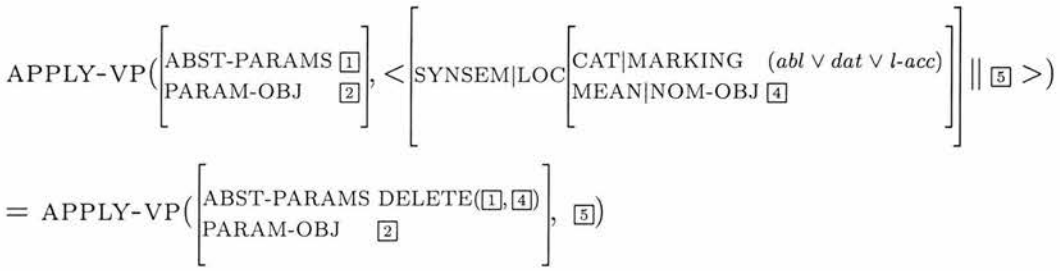



There are several points to note about the given structure. First, the ACCENT values of the complement daughter and the head daughter are respectively instantiated to *accent-A* and *no-accent*. This is because only the leftmost daughter of the VP is accented in a verbal focus. Second, the ACCENT value of the mother is specified as *accent-A*. This information will be used for the projection of focus upwards, which we will return to shortly. Third, the MEAN and RESTR values of the mother are the semantic objects returned by the functions APPLY-VP and RESTRICTIONS-VP, respectively. The function APPLY-VP takes as input a type and a list of phrases, and returns an object which is the result of the application of the type to the MEAN|NOM-OBJ values of the phrases. The two clauses of the function that will be instantiated by the above structure are the following:

(579) *Base:*

APPLY-VP(1, <>) = 1

(580) *Case = Ablative or Dative or L-accusative:*



DELETE is a binary function that removes its second argument from its first argument, which is a list. It is recursively defined as in (581). The vertical doublebar (||) is a notational convention which we will use to separate the first element of a list or an element of a set from the rest.

(581) a. DELETE(< [1] || [2] >, [1]) = [2]

b. DELETE(< [1] || [2] >, [3]) = < [1] || DELETE< [2], [3] >>

The function RESTRICTIONS-VP takes as input a list of objects and an empty list, and returns a set of propositions which are restrictions associated with certain semantic objects in its first argument. Below are the two clauses of this function that will be instantiated by the structure in (578):

(582) *Base:*

RESTRICTIONS-VP(<>, [1]) = [1]

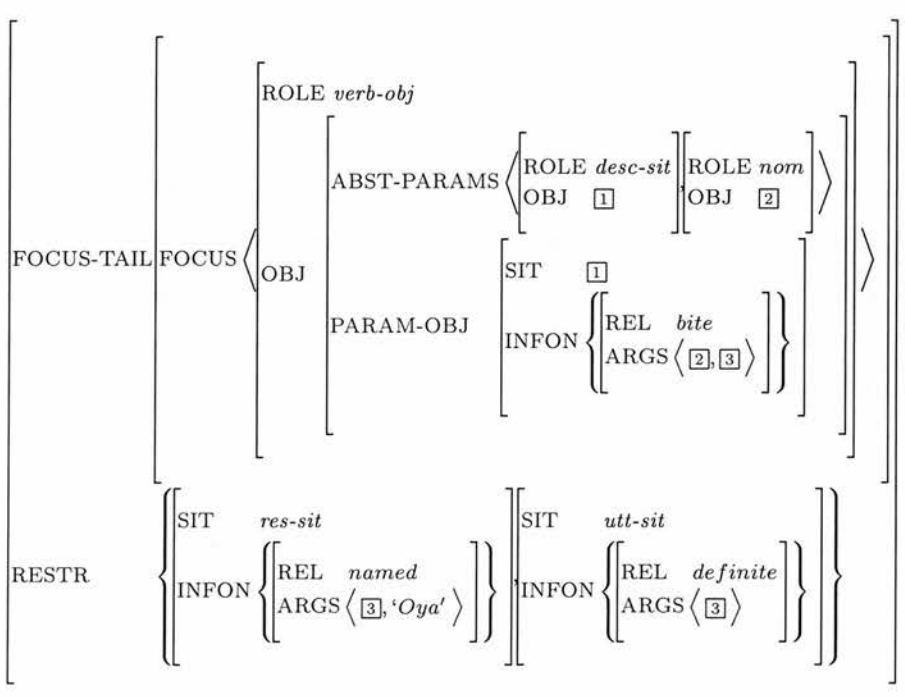
(583) *Case = Ablative or Dative or L-accusative:*

$$\text{RESTRICTIONS-VP}\left(<\left[\text{SYNSEM|LOC}\left[\begin{array}{l}\text{CAT|MARKING } (abl \vee dat \vee l\text{-}acc)\\ \text{MEAN|RESTR } \boxed{1}\end{array}\right]\right] \| \boxed{2} >, \boxed{3}\right)$$

$$= \text{RESTRICTIONS-VP}(\boxed{2}, \ < \boxed{1} \| \boxed{3} >)$$

(584) shows the MEAN value of the object in (578) with the values returned by APPLY-VP and RESTRICTIONS-VP:

(584)




Notice that all the propositions in the restriction of the complement daughter are added to the restriction set of the mother. However, this will be the case only when the complement is an object carrying case morphology. As discussed in Sections 3.2 and 6.3.1, a DO not carrying case morphology or a VP-internal subject must be weak. It is for this reason that the VP-internal subject in (585) and the DO without case morphology in (586) can receive neither a partitive interpretation nor an epistemically specific one:

(585) NE ol-du?
what happen-pst
'What happened?'

[$_S$ Oya-yı [$_{VP}$ bir KÖPEK ısır-dı]].
Oya-acc one dog bite-pst

'A (non-specific) dog bit Oya.'

(586) [$_S$ Fido [$_{VP}$ bir ELMA ye-di]].
Fido one apple eat-pst
'Fido ate a (non-specific) apple.'

In Section 3.2, we proposed that weak and strong NPs differ from each other in that the resource situation for an NP of the former kind is the described situation itself, whereas the resource situation for an NP of the latter kind is a situation other than

the described one. That is, we reduced the weak/strong distinction to the described situation vs. resource situation one. Now we can put forward the following principles to capture the weakness constraint on VP-internal subjects and DOs without case morphology, respectively:

(587) WEAK SUBJECT PRINCIPLE:

The NOM-OBJ value of SUBJ-DTR cannot appear as an argument to an infon supported by a resource situation in the set of RESTR.

(588) WEAK OBJECT PRINCIPLE:

The NOM-OBJ value of a complement daughter whose MARKING value is of sort *s-acc* cannot appear as an argument to an infon supported by a resource situation in the set of RESTR.

In order to incorporate the Weak Subject and Weak Object Principles into our Information Structuring Principle, we define two other recursive clauses for each of the functions APPLY-VP and RESTRICTIONS-VP:

(589) a. *Incorporated Nominal:*

$$\text{APPLY-VP}\left(\begin{bmatrix}\text{ABST-PARAMS}\ \boxed{1}\\ \text{PARAM-OBJ}\ \ \boxed{2}\end{bmatrix}, <\begin{bmatrix}\text{SYNSEM|LOC}\begin{bmatrix}\text{CAT|MARKING}\ \ (\textit{nom} \vee \textit{s-acc})\\ \text{MEAN|NOM-OBJ}\ \boxed{3}\ \textit{property}\end{bmatrix}\end{bmatrix} \| \boxed{4} >\right)$$

$$= \text{APPLY-VP}\left(\begin{bmatrix}\text{ABST-PARAMS}\ \text{DELETE}(\boxed{1},\boxed{3})\\ \text{PARAM-OBJ}\ \ \boxed{2}\end{bmatrix}, \boxed{4}\right)$$

b. *Non-Incorporated Weak Nominal:*

$$\text{APPLY-VP}\left(\begin{bmatrix}\text{ABST-PARAMS}\ \boxed{1}\\ \text{PARAM-OBJ}\ \ \begin{bmatrix}\text{SIT}\ \ \boxed{2}\\ \text{INFON}\ \boxed{3}\end{bmatrix}\end{bmatrix},\right.$$

$$< \left[ \text{SYNSEM|LOC} \left[ \begin{array}{l} \text{CAT|MARKING } (nom \vee s\text{-}acc) \\ \text{MEAN} \left[ \begin{array}{l} \text{NOM-OBJ } \boxed{4}\ individual \\ \text{RESTR } \left\{ \left[ \begin{array}{l} \text{SIT } res\text{-}sit \\ \text{INFON } \boxed{5} \end{array} \right], \left[ \begin{array}{l} \text{SIT } utt\text{-}sit \\ \text{INFON } \left\{ \left[ \begin{array}{l} \text{REL } indefinite \\ \text{ARGS } \langle \boxed{4} \rangle \end{array} \right] \right\} \end{array} \right] \right\} \end{array} \right] \end{array} \right] \right] \| \boxed{6} > )$$

$$= \text{APPLY-VP}( \left[ \begin{array}{l} \text{ABST-PARAMS DELETE}(\boxed{1}, \boxed{4}) \\ \text{PARAM-OBJ } \left[ \begin{array}{l} \text{SIT } \boxed{2} \\ \text{INFON } \boxed{3} \cup \boxed{5} \end{array} \right] \end{array} \right], \boxed{6})$$

(590) a. *Incorporated Nominal:*

$$\text{RESTRICTIONS-VP}(< \left[ \text{SYNSEM|LOC} \left[ \begin{array}{l} \text{CAT|MARKING } (nom \vee s\text{-}acc) \\ \text{MEAN|NOM-OBJ|OBJ } property \end{array} \right] \right] \| \boxed{1} >, \boxed{2})$$

$$= \text{RESTRICTIONS-VP}(\boxed{1}, \boxed{2})$$

b. *Non-Incorporated Weak Nominal:*

$$\text{RESTRICTIONS-VP}( < \left[ \text{SYNSEM|LOC} \left[ \begin{array}{l} \text{CAT|MARKING } (nom \vee s\text{-}acc) \\ \text{MEAN} \left[ \begin{array}{l} \text{NOM-OBJ|OBJ } \boxed{1} individual \\ \text{RESTR } \left\{ \boxed{2} \left[ \begin{array}{l} \text{SIT } utt\text{-}sit \\ \text{INFON } \left\{ \left[ \begin{array}{l} \text{REL } indefinite \\ \text{ARGS } \langle \boxed{1} \rangle \end{array} \right] \right\} \end{array} \right], \ldots \right\} \end{array} \right] \end{array} \right] \right] \|$$

$$\boxed{3} >, \boxed{4})$$

$$= \text{RESTRICTIONS-VP}(\boxed{3}, \boxed{4} \cup \{\boxed{2}\})$$

The (a) clauses deal with incorporated nominals whose MARKING value is of sort either *nom* or *s-acc*. As such nominals do not have any restrictions associated with

their semantic objects (cf. Section 7.3.2), they are skipped over by the function RESTRICTIONS-VP without any change to the second argument which the restrictions are accumulated on. The (b) clauses handle non-incorporated indefinites whose MARKING value is of sort either *nom* or *s-acc*. (589b) places any infon supported by the resource situation of the nominal in the set of infons supported by the described situation. This will preclude the violation of the Weak Subject and Weak Object Principles. The (b) clause of RESTRICTIONS-VP places the indefiniteness restriction associated with the nominal in the restriction set of the mother. To give an example, the semantic object yielded by means of these functions for the VP *bir köpek ısırdı* in (585) will be as shown in (591):

(591)

$$\left[\begin{array}{l}\text{FOCUS-TAIL}\left[\text{FOCUS}\left\langle\left[\begin{array}{l}\text{ROLE } \textit{verb-obj}\\ \text{OBJ}\left[\begin{array}{l}\text{ABST-PARAMS}\left\langle\left[\begin{array}{l}\text{ROLE } \textit{desc-sit}\\ \text{OBJ } \boxed{1}\end{array}\right]\left[\begin{array}{l}\text{ROLE } \textit{acc}\\ \text{OBJ } \boxed{2}\end{array}\right]\right\rangle\\ \text{PARAM-OBJ}\left[\begin{array}{l}\text{SIT } \boxed{1}\\ \text{INFON}\left\{\left[\begin{array}{l}\text{REL } \textit{bite}\\ \text{ARGS}\left\langle\boxed{2},\boxed{3}\right\rangle\end{array}\right]\left[\begin{array}{l}\text{REL } \textit{dog}\\ \text{ARGS } \boxed{3}\end{array}\right]\right\}\end{array}\right]\end{array}\right]\right\rangle\right]\\ \text{RESTR}\left\{\left\{\left[\begin{array}{l}\text{SIT } \textit{utt-sit}\\ \text{INFON}\left\{\left[\begin{array}{l}\text{REL } \textit{indefinite}\\ \text{ARGS}\left\langle\boxed{3}\right\rangle\end{array}\right]\right\}\end{array}\right]\right\}\right\}\end{array}\right]$$

It should be noted that the association of the leftmost daughter of the VP with an A accent is a necessary but not sufficient condition for a verbal-focus interpretation (i.e. an interpretation where the focal constituent is headed by the verb). For instance, the phonological structure of the VP of the response sentence in (574) satisfies this condition, but the sentence receives an interpretation where the focus is a nominal. One could claim that in Turkish complements realised as (nominal) foci must occur VP-externally (and S-internally). On this view, it would be possible to consider the association of the leftmost daughter of the VP with an A accent as a necessary and sufficient condition on verbal-focus interpretation in Turkish, because A-accented complements in examples like (574) would be VP-external. However, it

is not difficult to find examples that would invalidate such a claim. Consider the question-answer pairs below:

(592) Oya-yı NE ısır-dı?
Oya-acc what bite-pst
'What bit Oya?'

Kaya Oya-yı [$_F$ bir KÖPEK] ısır-dığ̃-ı-nı söylü-yor.
Kaya Oya-acc one dog bite-ger-poss3-acc say-prog

'Kaya says that [$_F$ a DOG] bit Oya.'

(593) Kaya NE ye-di?
Kaya what eat-pst
'What did Kaya eat?'

Kaya [$_F$ bir ELMA] ye-di.
Kaya one apple eat-pst

'Kaya ate [$_F$ an APPLE].'

As discussed in the preceding chapter, if the grammatical subject of a nominalised Turkish sentence does not carry case morphology, this means that it occurs VP-internally. Recall also that a direct object with no case morphology is restricted to a position adjacent to a lexical head (cf. Section 3.4). Therefore, the nominal foci in the examples above are VP-internal.

We should also note that the number of VP-internal nominal foci does not have to be one. The information structuring component of the grammar does not place any restriction on the number of such elements. There can be more than one VP-internal complement that functions as nominal focus. Also, it is possible for the VP to have no focal element. The examples below illustrate such cases:

(594) Oya KIM-I KIM-E tanıt-tı?
Oya who-acc who-dat introduce-pst
'Who did Oya introduce to whom?'

Oya [$_{VP}$ KAYA-YI ALI-YE tanıt-tı].
Oya Kaya-acc Ali-dat introduce-pst

'Oya introduced KAYA to ALI.'

(595) KIM Kaya-yı Ali-ye tanıt-tı?
who Kaya-acc Ali-dat introduce-pst
'Who introduced Kaya to Ali?'

[$_S$ OYA [$_{VP}$ Kaya-yı Ali-ye tanıt-tı].
Oya Kaya-acc Ali-dat introduce-pst

'OYA introduced Kaya to Ali.'

Another possibility is that some of the leftmost complements are focal while the others are not, as illustrated in the following example:

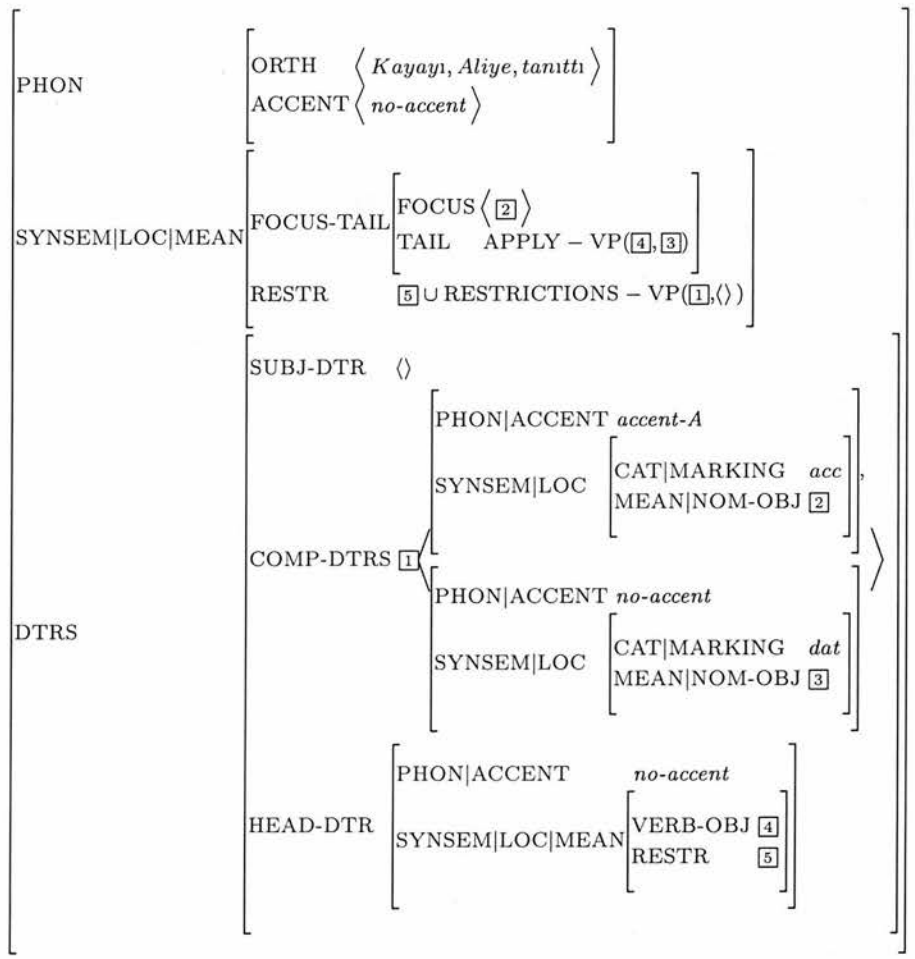
(596) Oya KIM-I Ali-ye tanıt-tı?
Oya who-acc Ali-dat introduce-pst
'Who did Oya introduce to Ali?'

Oya [$_{VP}$ KAYA-YI Ali-ye tanıt-tı].
Oya Kaya-acc Ali-dat introduce-pst

'Oya introduced KAYA to Ali.'

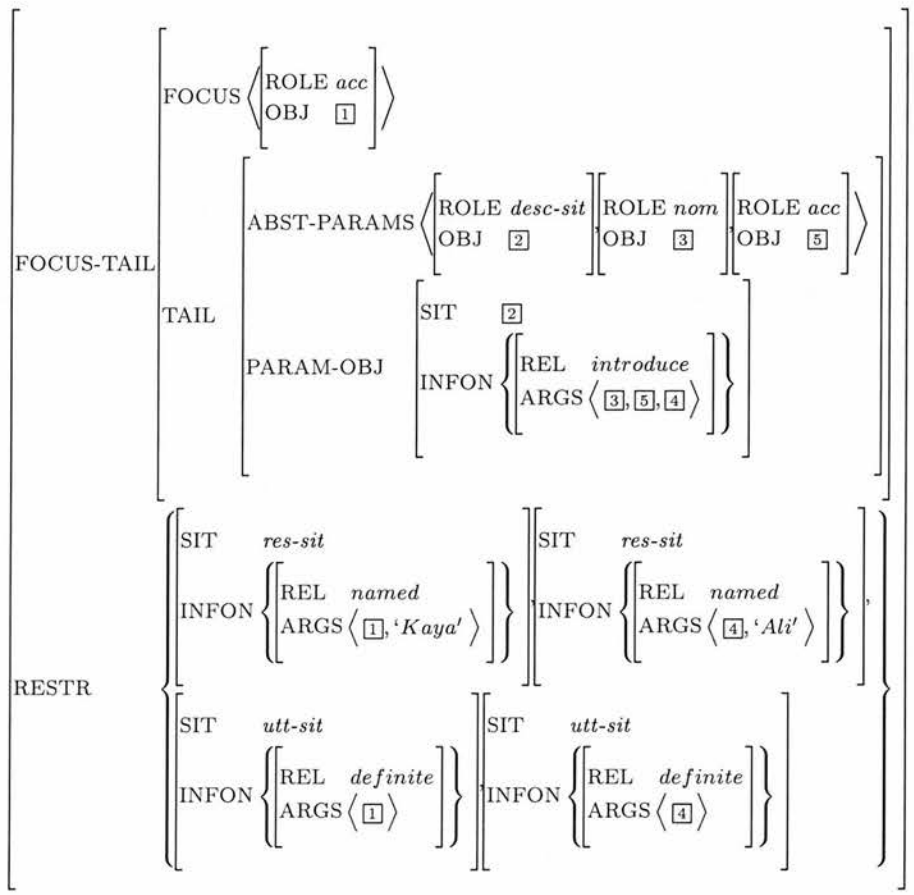
In this example, *Kaya-yı* 'Kaya-acc' is in focus, whereas *Ali-ye* 'Ali-dat' is backgrounded. The sign for the VP of the response sentence will be as described in (597):

(597)




As this structure represents an interpretation where the focus is not verbal, the mother's ACCENT value is instantiated to *no-accent*. The mother's FOCUS value is a list whose only element is token-identical to the NOM-OBJ value of the focal nominal, which is the only daughter whose ACCENT value is *accent-A*. The TAIL value is the result of the application of the head daughter's VERB-OBJ value (which is a type) to the non-focal complement's NOM-OBJ value (which is an assignment). The feature RESTR encodes all the restrictions associated with the daughters. (598) shows the MEAN value of the above object with the values returned by the functions APPLY-VP and RESTRICTIONS-VP:

(598)




Now we formulate the first part of our Information Structuring Principle as follows:

(599) *Information Structuring Principle* (part#1):

If the DTRS value is of sort *subj-comps-head-struc* then,

a. if the leftmost daughter is A-accented (and the other daughters are unaccented), then the ROLE value of the single element in the mother's FOCUS list is *verb-obj* and the OBJ value of that element is APPLY-VP(TYPE, DTRS), the mother's RESTR value is the union of the restrictions associated with the verb and those associated with strong complements, and its ACCENT value is of sort *accent-A*,

or

b. if the first n ($0 \leq n$) leftmost daughters are A-accented (and the other daughters are unaccented), then the mother's FOCUS value is the list of the NOM-OBJ values of the A-accented daughters, its TAIL value is APPLY-VP(*TYPE, UNACCENTED-DTRS*), its RESTR value is the union of the restrictions associated with the verb and those associated with

strong complements, and its ACCENT value is of sort *no-accent*,

where *TYPE* is the HEAD-DTR's VERB-OBJ value and *DTRS* is the list obtained by concatenating the SUBJ-DTR and COMP-DTRS values, and *UNACCENTED-DTRS* contains those elements of this list which are unaccented.

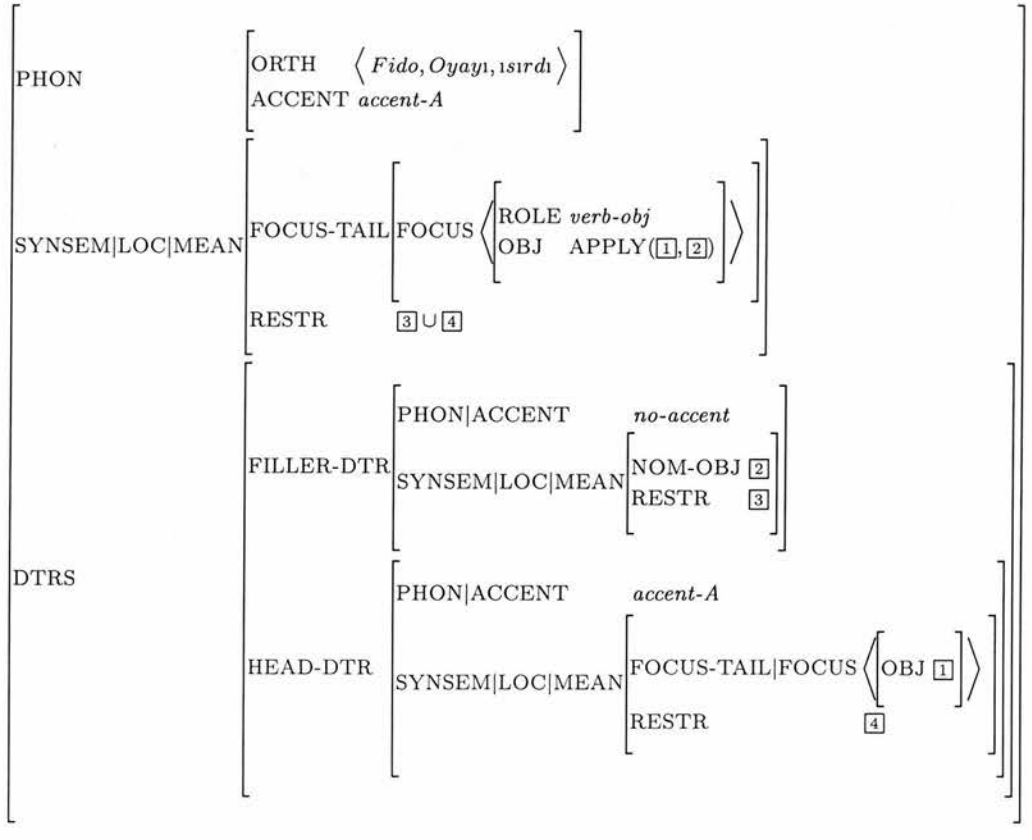
**Part#2 of the ISP:**

In formulating the second part of the ISP (i.e. the part for the Filler-Head Schema) we, again, need to consider cases of verbal focus and those of nominal focus separately. Let us start with the former. Consider the following all-focus sentence, which might be used as an answer to (the Turkish equivalent of) a question like 'What happened when I was gone?':

(600) [$_S$ Fido [$_{VP}$ OYA-YI ısır-dı]].
Fido Oya-acc bite-pst
'Fido bit OYA.'

The phrasal sign corresponding to the VP of this sentence will be the same as the one in (578). (601) shows the sign corresponding to its S:

(601)



There are four points to note about this sign as relevant to our discussion. First, the ACCENT value of the head daughter is instantiated to *accent-A*. This is to ensure that the head allows for focus projection. Second, the ACCENT value of the mother, too, is instantiated to *accent-A*. This is to allow for further focus projection over possible S-internal constituents that appear higher up in the tree (which will not be the case in our particular example). Third, the ACCENT value of the filler daughter is of sort *no-accent*. This is simply because a verbal-focus sentence has a unique A accent that is associated with the leftmost daughter of its VP. Finally, the RESTR value of the mother is the union of the RESTR values of the daughters, and its FOCUS value is an assignment list with a single element, whose OBJ value is the semantic object returned by the function APPLY. This is a binary function whose inputs are a type and an assignment. Its output is either a proposition (by (602a)) or a type (by (602b)):

(602) a.

$$\text{APPLY}\left(\begin{bmatrix}\text{ABST-PARAMS} & \langle \boxed{1} \rangle \\ \text{PARAM-OBJ} & \boxed{2}\end{bmatrix}, \boxed{1}\right) = \boxed{2}$$

b.

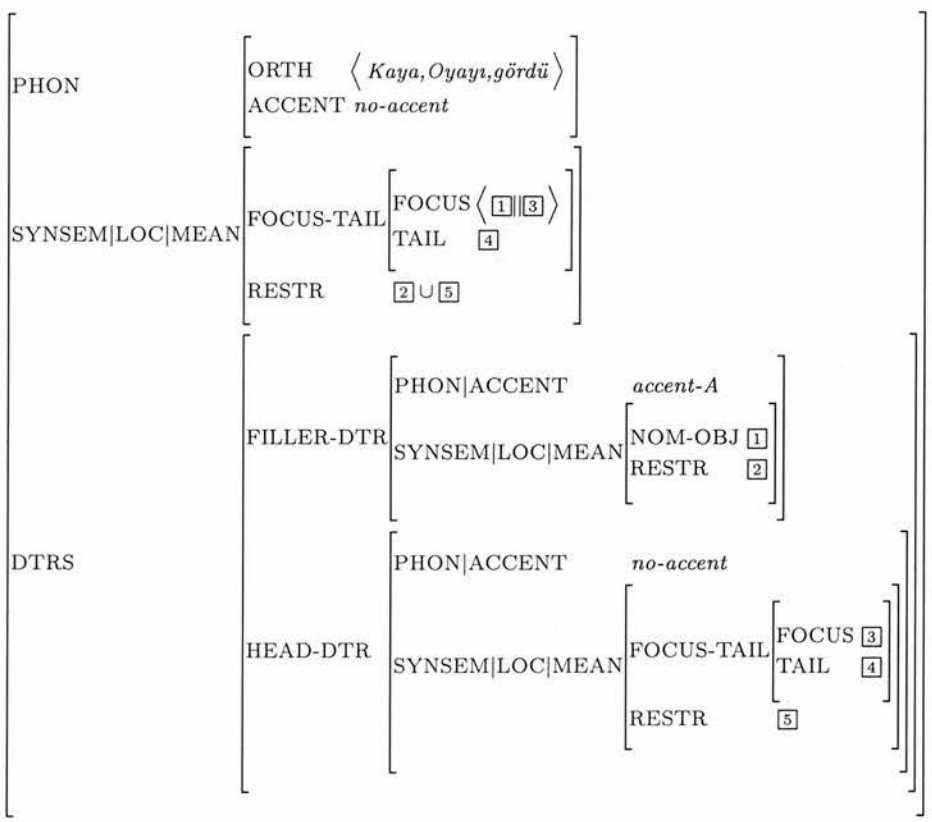
$$\text{APPLY}\left(\begin{bmatrix}\text{ABST-PARAMS} & \boxed{1}\langle \boxed{2}, \boxed{3} \parallel \boxed{4} \rangle \\ \text{PARAM-OBJ} & \boxed{5}\end{bmatrix}, \boxed{6}\right) = \begin{bmatrix}\text{ABST-PARAMS} & \text{DELETE}(\boxed{1}, \boxed{7}) \\ \text{PARAM-OBJ} & \boxed{5}\end{bmatrix}$$

As for cases of nominal focus, consider first the response sentence in the following example, where the nominal focus is a VP-external and S-internal complement:

(603) a. KIM Oya-yı gör-dü?
who Oya-acc see-pst
'Who saw Oya?'

[$_S$ KAYA [$_{VP}$ Oya-yı gör-dü]].
Kaya Oya-acc see-pst
'KAYA saw Oya.'

b.




Since we have a case of nominal focus, the ACCENT value of the head daughter is instantiated to *no-accent*. This information is passed up to the mother in order to prevent a verbal-focus treatment of a possible filler daughter that appears higher up the tree. The mother's FOCUS value is the list of FOCUS elements of the head daughter plus the NOM-OBJ value of the filler daughter, its RESTR value is the union of the daughter's RESTR values, and its TAIL value is token identical to that of the head daughter.

As should be remembered from Section 4.2.3, in a Turkish sentence it is possible to find background elements between the (nominal) focus and the verb. Such an element may also occupy a VP-external position, as illustrated in the following example:

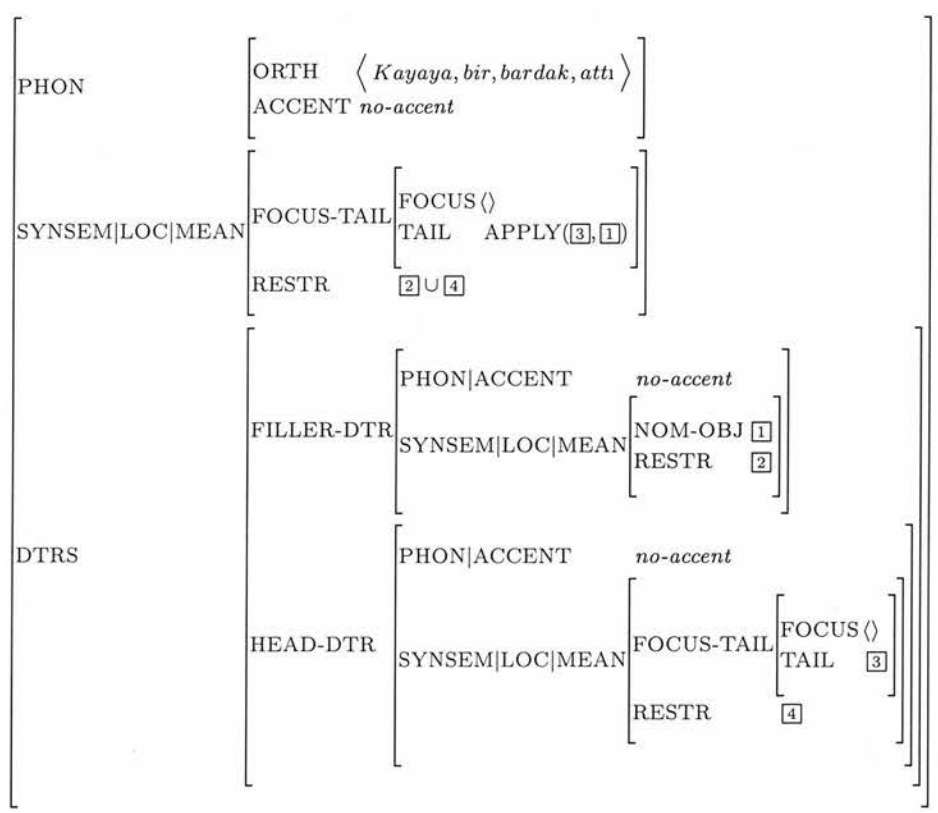
(604) Parti-de KIM Kaya-ya bir bardak at-tı?
party-loc who Kaya-dat one glass throw-pst
'Who threw a glass at Kaya at the party?'

[$_S$ OYA [$_S$ Kaya-ya [$_{VP}$ bir bardak at-tı]]].
Oya Kaya-dat one glass throw-pst

'OYA threw a glass at Kaya.'

Recall that the linear arrangement of the VP-internal constituents of a Turkish sentence is made in accordance with the *Subject-Direct Object-Indirect Object* order. In (604) the IO *Kaya-ya* 'Kaya-dat' precedes the DO *bir bardak* 'a glass'. This means that it has already been slashed from the COMPS list of the verb and it has been placed in a VP-external position by the Filler-Head Schema. The structure of the S *Kayaya bir bardak attı* 'threw a glass at Kaya' is shown in (605):

(605)




The crucial point about cases where the filler daughter is non-focal is that the FOCUS value of the head daughter is constrained to be an empty list. This is to ensure three things. First, these will be cases of nominal focus. In a case of verbal focus, the FOCUS value will be a list with a verbal element. Second, we want to rule out cases where a non-focal element intervenes between two focal ones. As mentioned in Section 4.2, sentences like the (b) ones in the following examples sound very odd in Turkish:

(606) a. Parti-de Kaya-ya [$_S$ KIM [$_{VP}$ NE at-tı]].
party-loc Kaya-dat who what throw-pst
'Who threw what at Kaya at the party?'

b. *Parti-de [$_S$ KIM [$_S$ Kaya-ya [$_{VP}$ NE at-tı]]].
party-loc who Kaya-dat what throw-pst

(607) a. Parti-de Kaya-ya [$_S$ OYA [$_{VP}$ bir BARDAK at-tı]].
party-loc Kaya-dat Oya one glass throw-pst
'OYA threw a GLASS at Kaya.'

b. *Parti-de [$_S$ OYA [$_S$ Kaya-ya [$_{VP}$ bir BARDAK at-tı]]].
party-loc Oya Kaya-dat one glass throw-pst

If there is any focal element within the head daughter its FOCUS value will be non-empty, and this will prevent it from combining a non-focal filler daughter.

Third, the emptiness constraint on the FOCUS value of the head daughter will block structures like the one in (608b):

(608) Kaya KIM-I gör-dü?
Kaya who-acc see-pst
'Who did Kaya see?'

a. Kaya [$_S$ [$_{VP}$ OYA-YI gör-dü]].
Kaya Oya-acc see-pst
'Kaya saw OYA.'

b. *[$_S$ Kaya [$_{VP}$ OYA-YI gör-dü]].

In Section 4.3, we saw that in a nominal-focus Turkish sentence the S can not contain an element that precedes the focal ones, as in (608b).

In the light of these observations, we formulate the second part of the ISP as follows:

(609) *Information Structuring Principle* (part#2):

If the DTRS value is of sort *filler-head-struc* then the mother's RESTR value is the union of the RESTR values of the daughters, and

a. if the head daughter's ACCENT value is of sort *accent-A* and the filler daughter's ACCENT value is of sort *no-accent*, then the ROLE value of the single element in the mother's FOCUS list is *verb-obj* and the OBJ value of that element is the value returned by the application of the OBJ value of the element in the head daughter's FOCUS list to the filler daughter's NOM-OBJ value,

or

b. if the head daughter's ACCENT value is of sort *no-accent*, then

i. if the filler daughter's ACCENT value is of sort *accent-A* then the mother's FOCUS value is the list of FOCUS elements of the head daughter plus the NOM-OBJ value of the filler daughter and its TAIL value is structure-shared with that of the head daughter,

or

ii. if the filler daughter's ACCENT value is of sort *no-accent* and the head daughter's FOCUS value is an empty list then the mother's FOCUS value is an empty list and its TAIL value is the value returned by the application of the head daughter's TAIL value to the NOM-OBJ value of the filler daughter.

**Part#3 of the ISP:**

The third part of our Information Structuring Principle will apply to the E-Schema. Recall that an S-external element can be either a topic or a non-topical background element. Basically, the third part of the ISP is intended to carry out the following four tasks:

1. to transform the MEAN value of the S daughter into an object that can be applied to or predicated of the NOM-OBJ values of the S-external elements or the described situation,

2. to apply the object obtained in 1 NOM-OBJ values of the non-topical S-external NPs and, possibly, the described situation,

3. to predicate the object obtained in 2 of the list of NOM-OBJ values of topical elements, if this list is non-empty, or of the described situation, if this list is empty, and

4. to accumulate all restrictions associated with the daughters.

Consider the following question-answer pair:

(610) Oya-dan NE haber? O Kaya-ya NE ver-di?
Oya-abl what news she Kaya-dat what give-pst
'What about Oya? What did she give to Kaya?'

[$_E$ Oya Kaya-ya [$_S$ bu KITAB-I ver-di]].
Oya Kaya-dat this book-acc give-pst

'Oya gave this BOOK to Kaya.'

In the response sentence, *Oya* is the topic, *Kaya-ya* 'Kaya-dat' is a non-topical background element, and *bu kitab-ı verdi* 'gave a book' is an S containing a nominal focus. (611), (612), and (613) show, respectively, the MEAN values of these three expressions:

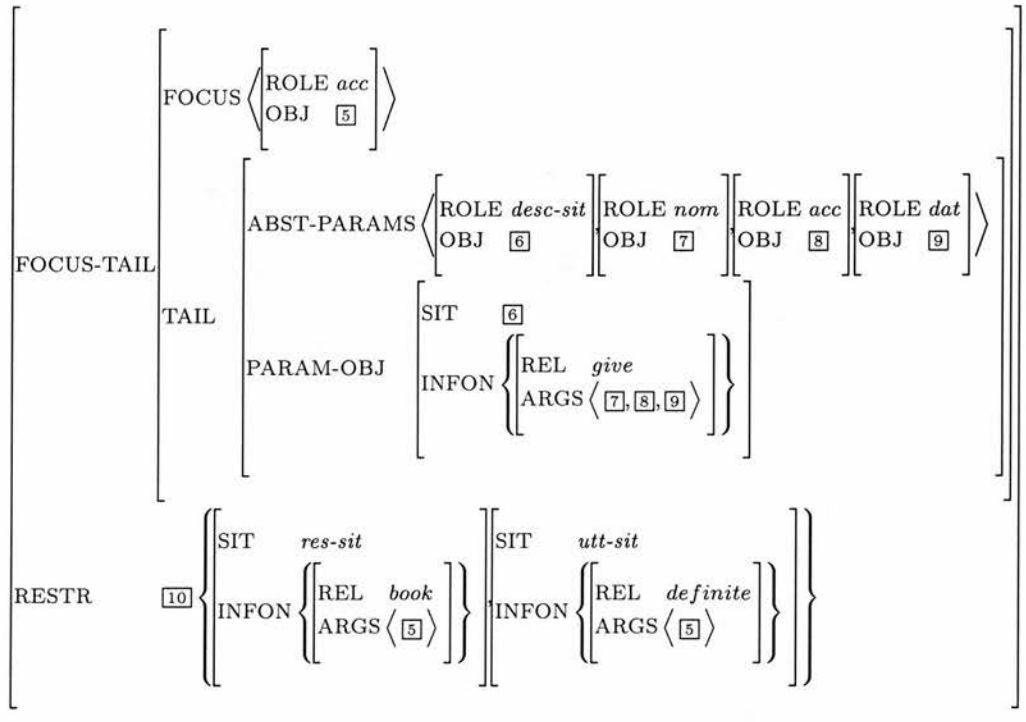
(611)

$$\left[\begin{array}{l} \text{NOM-OBJ}\left[\begin{array}{l}\text{ROLE } \textit{nom}\\ \text{OBJ } \boxed{1}\end{array}\right] \\ \text{RESTR } \boxed{2}\left\{\left[\begin{array}{l}\text{SIT } \textit{res-sit}\\ \text{INFON}\left\{\left[\begin{array}{l}\text{REL } \textit{named}\\ \text{ARGS}\left\langle \boxed{1}, \textit{`Oya'}\right\rangle\end{array}\right]\right\}\end{array}\right]\left[\begin{array}{l}\text{SIT } \textit{utt-sit}\\ \text{INFON}\left\{\left[\begin{array}{l}\text{REL } \textit{definite}\\ \text{ARGS}\left\langle \boxed{1}\right\rangle\end{array}\right]\right\}\end{array}\right]\right\} \end{array}\right]$$

(612)

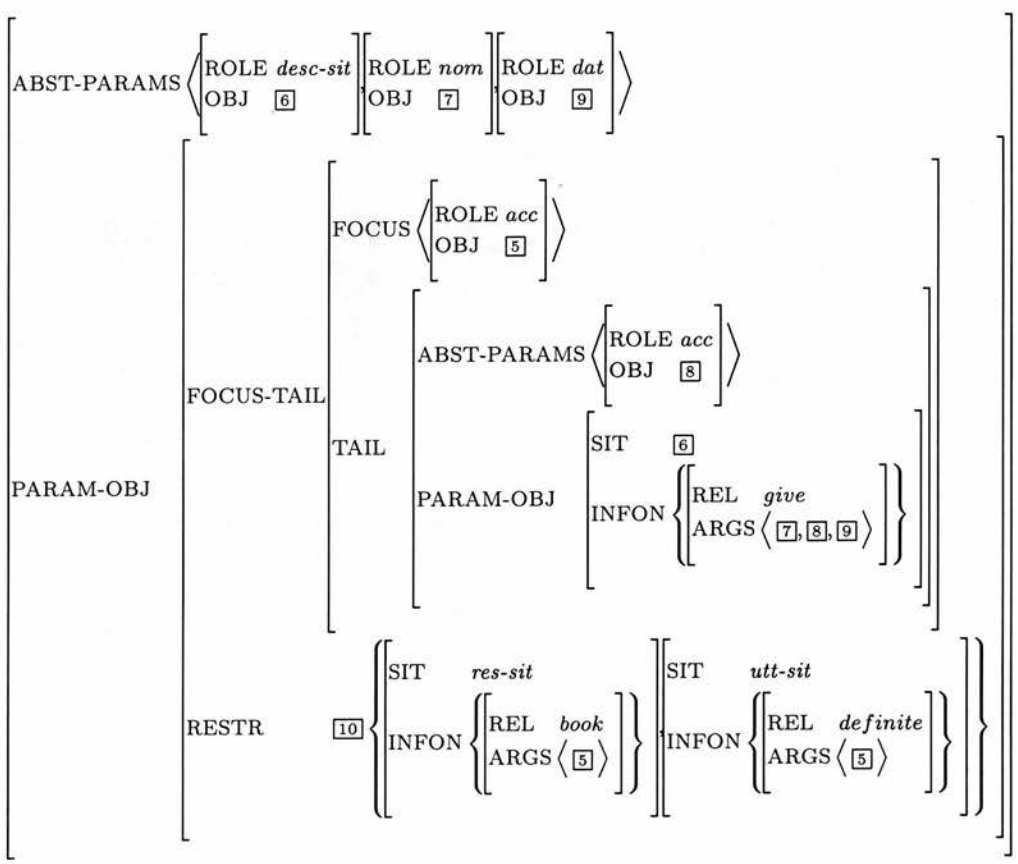
$$\left[\begin{array}{l} \text{NOM-OBJ}\left[\begin{array}{l}\text{ROLE } \textit{dat}\\ \text{OBJ } \boxed{3}\end{array}\right] \\ \text{RESTR } \boxed{4}\left\{\left[\begin{array}{l}\text{SIT } \textit{res-sit}\\ \text{INFON}\left\{\left[\begin{array}{l}\text{REL } \textit{named}\\ \text{ARGS}\left\langle \boxed{3}, \textit{`Kaya'}\right\rangle\end{array}\right]\right\}\end{array}\right]\left[\begin{array}{l}\text{SIT } \textit{utt-sit}\\ \text{INFON}\left\{\left[\begin{array}{l}\text{REL } \textit{definite}\\ \text{ARGS}\left\langle \boxed{3}\right\rangle\end{array}\right]\right\}\end{array}\right]\right\} \end{array}\right]$$

(613)



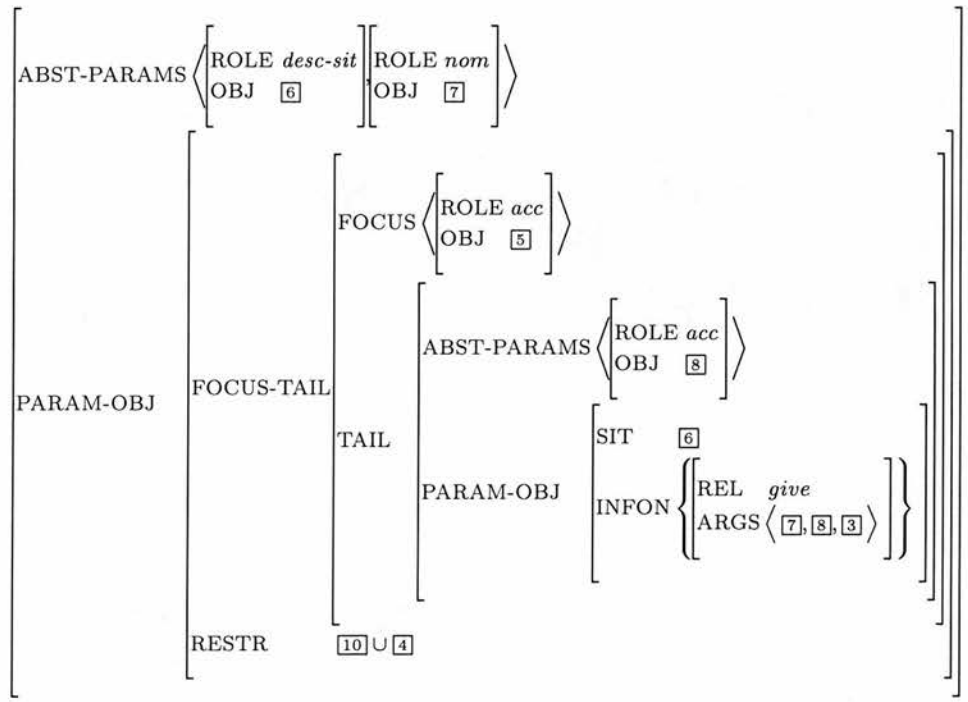

First, the structure in (613) will be transformed into a type that can be applied to or predicated of the objects in (611) and (612) and the described situation. This will be done by making the abstracted parameters other than the one co-indexed with the focus take scope over the whole structure:

(614)



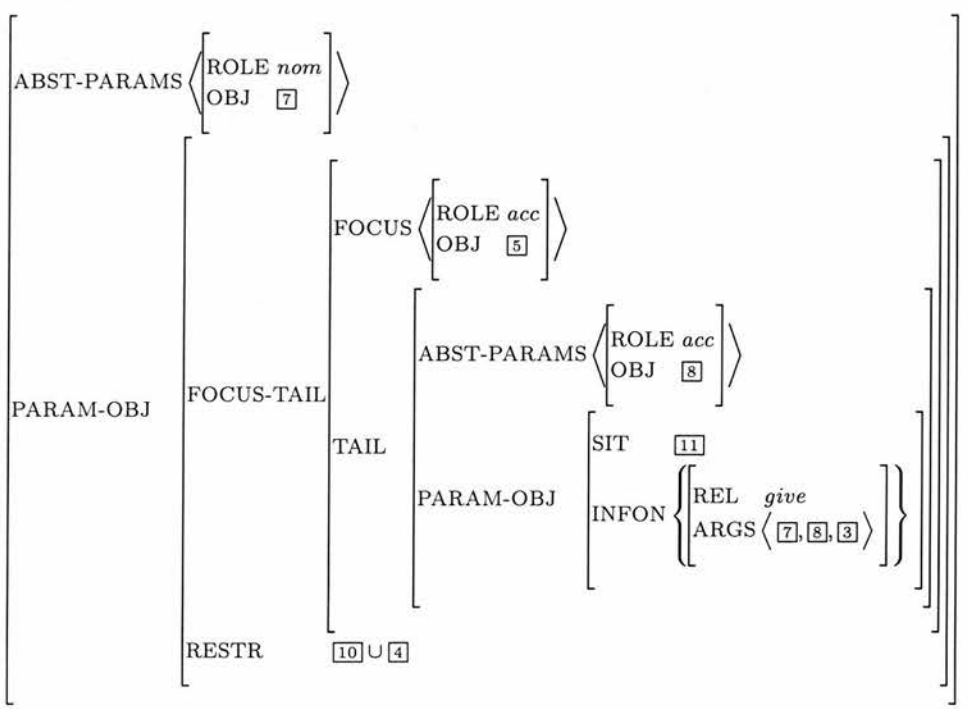

Then, the resulting type will be applied to the object in (612). This will yield the following object:

(615)



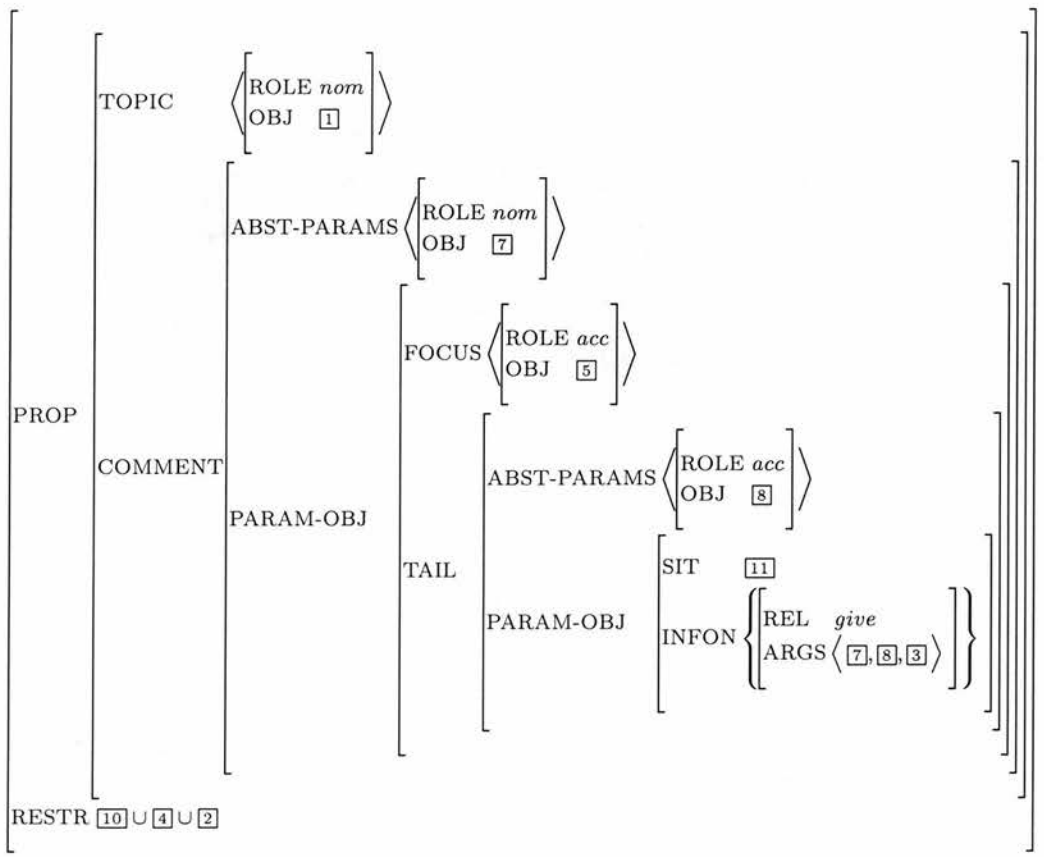

Afterwards, (615) will be apllied to an assignment whose ROLE value is of sort *desc-sit* and whose OBJ value is a parameter, which will yield the following type:

(616)




Finally, the predicate resulting from these operations will be predicated of the NOM-OBJ value of (611):

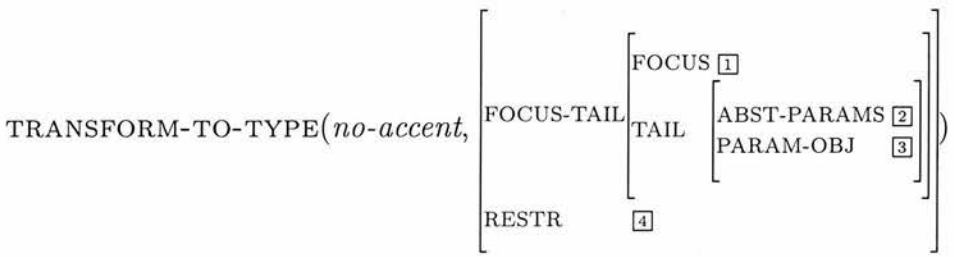
(617)




Note that in parallel to the above operations all restrictions associated with the daughters are accumulated in a set that ends up being the RESTR value of the resulting Russellian proposition.

We will mainly have two functions to carry out the operations exemplified above: TRANSFORM-TO-TYPE and TOPIC-COMMENT. The function TRANSFORM-TO-TYPE will have two clauses: one for nominal foci and one for verbal foci:

(618) a. *A clause for nominal foci:*



$$= \left[\begin{array}{l} \text{TYPE} \left[\begin{array}{l} \text{ABST-PARAMS DIFFERENCE}(\boxed{2},\boxed{1}) \\ \text{PARAM-OBJ} \left[\begin{array}{l} \text{FOCUS } \boxed{1} \\ \text{TAIL} \left[\begin{array}{l} \text{ABST-PARAMS DIFFERENCE}(\boxed{2}, \text{DIFFERENCE}(\boxed{2},\boxed{1})) \\ \text{PARAM-OBJ } \boxed{3} \end{array}\right] \end{array}\right] \end{array}\right] \\ \text{RESTR } \boxed{4} \end{array}\right]$$

b. *A clause for verbal foci:*

$$\text{TRANSFORM-TO-TYPE}(\textit{accent-A}, \left[\begin{array}{l} \text{FOCUS-TAIL} \left[\begin{array}{l} \text{FOCUS } \boxed{1} \left\langle \left[\text{OBJ}|\text{ABST-PARAMS } \boxed{2}\right] \right\rangle \\ \text{RESTR } \boxed{3} \end{array}\right] \end{array}\right])$$

$$= \left[\begin{array}{l} \text{TYPE} \left[\begin{array}{l} \text{ABST-PARAMS } \boxed{4} \text{ CHANGE} - \text{OBJECTS}(\boxed{1},\langle\,\rangle) \\ \text{PARAM-OBJ} \left[\begin{array}{l} \text{FOCUS } \boxed{1} \\ \text{TAIL} \left[\begin{array}{l} \text{ABST-PARAMS} \left\langle \left[\begin{array}{l} \text{ROLE } \textit{verb-obj} \\ \text{OBJ } \boxed{5} \end{array}\right] \right\rangle \\ \text{PARAM-OBJ } \text{APPLY}(\boxed{5},\boxed{4}) \end{array}\right] \end{array}\right] \end{array}\right] \\ \text{RESTR } \boxed{3} \end{array}\right]$$

This function is invested with the task of transforming its second argument (which will be the MEAN value of the S daughter) into a (restricted) type object whose ABST-PARAMS list contains those parameters that are not co-indexed with focal constituents. The functions DIFFERENCE and CHANGE-OBJECTS are respectively responsible for constructing this list for expressions with nominal and verbal foci. DIFFERENCE returns as output the difference between its first and second arguments, which are the ABST-PARAMS and FOCUS lists in our particular case:

(619) a. $\text{DIFFERENCE}(\boxed{1}, \langle\,\rangle) = \boxed{1}$

b. $\text{DIFFERENCE}(\boxed{1}, <\boxed{2} \parallel \boxed{3}>) = \text{DIFFERENCE}(\text{DELETE}(\boxed{1}, \boxed{2}), \boxed{3})$

CHANGE-OBJECTS takes as input a list of assignments, which is the ABST-PARAMS value of the verbal focus in our case, and an empty list, and returns a list of assignments with the same role indices but arbitrary parametric objects:

(620) a. CHANGE-OBJECTS($\langle\rangle$, [1]) = [1]

b. CHANGE-OBJECTS($\left\langle \left[\text{ROLE } [1]\right] \| [2] \right\rangle$, [3])

= CHANGE-OBJECTS([2], $\left\langle \left[\text{ROLE } [1]\right] \| [3] \right\rangle$)

TOPIC-COMMENT will be a quadruple function that takes as input the list of LEFT-DTRS value, the list of RIGHT-DTRS value, the output returned by TRANSFORM-TO-TYPE (that takes the MEAN value of the S daughter) and an empty list. Basically, the first thing this function will do is to recursively check every element of its first two arguments, apply those that are non-topical to its third argument (which is a type object), and accumulate those that are topical on its fourth argument and the restrictions on the RESTR value of its third argument. These operations will be performed by four recursively defined clauses:

*1. A clause for a topical element that precedes the S:*

(621)

$$\text{TOPIC-COMMENT}(<\left[\begin{array}{ll}\text{PHON|ACCENT} & (\textit{no-accent} \vee \textit{accent-B}) \\ \text{SYNSEM|LOC|MEAN} & \left[\begin{array}{ll}\text{NOM-OBJ} & [1] \\ \text{RESTR} & [2]\end{array}\right]\end{array}\right] \| [3] >, [4], \left[\begin{array}{ll}\text{TYPE} & [5] \\ \text{RESTR} & [6]\end{array}\right], [7])$$

$$= \text{TOPIC-COMMENT}([3], [4], \left[\begin{array}{ll}\text{TYPE} & [5] \\ \text{RESTR} & [6] \cup [2]\end{array}\right], < [1] \| [7] >)$$

This clause of the TOPIC-COMMENT function is intended to deal with topical elements that fall to the left of the S (e.g. *Oya* in (610)). As should be recalled from Chapter 5, in Turkish a topic preceding the S can be realised either as unaccented or with a B accent. Hence, the PHON|ACCENT value of the topical input to this clause of the function is specified to be either of sort *no-accent* or of sort *accent-B*. What this clause does is to add the NOM-OBJ value of the topical input to the list of topics encoded by the fourth argument and to combine its RESTR value with that of the third argument.

*2. A clause for a non-topical element that precedes the S:*

(622)

$$\text{TOPIC-COMMENT}\Big(\ <\begin{bmatrix}\text{PHON|ACCENT} & \textit{no-accent}\\ \text{SYNSEM|LOC|MEAN} & \begin{bmatrix}\text{NOM-OBJ}\ \boxed{1}\\ \text{RESTR}\ \boxed{2}\end{bmatrix}\end{bmatrix} \| \boxed{3} >,\ \boxed{4}, \begin{bmatrix}\text{TYPE}\ \boxed{5}\\ \text{RESTR}\ \boxed{6}\end{bmatrix},\ \boxed{7}\Big)$$

$$= \text{TOPIC-COMMENT}\Big(\ \boxed{3},\ \boxed{4}, \begin{bmatrix}\text{TYPE}\ \ \text{APPLY}(\boxed{5},\boxed{1})\\ \text{RESTR}\ \boxed{6}\cup\boxed{2}\end{bmatrix},\ \boxed{7}\Big)$$

This clause of TOPIC-COMMENT is intended to handle non-topical elements that precede the S. Such elements cannot be accented. Thus, the PHON|ACCENT value of the non-topical input is constrained to be of sort *no-accent*. The clause applies the TYPE value of its third argument to the NOM-OBJ value of this non-topical argument and combines the RESTR value of this argument with the RESTR value of its third argument.

*3. A clause for a topical element that appears potverbally:*

(623)

$$\text{TOPIC-COMMENT}\Big(\ \boxed{1},\ <\begin{bmatrix}\text{PHON|ACCENT} & \textit{no-accent}\\ \text{SYNSEM|LOC|MEAN} & \begin{bmatrix}\text{NOM-OBJ}\ \boxed{2}\\ \text{RESTR}\ \boxed{3}\end{bmatrix}\end{bmatrix} \| \boxed{4} >, \begin{bmatrix}\text{TYPE}\ \boxed{5}\\ \text{RESTR}\ \boxed{6}\end{bmatrix}, \boxed{7}\Big)$$

$$= \text{TOPIC-COMMENT}\Big(\ \boxed{1},\ \boxed{4}, \begin{bmatrix}\text{TYPE}\ \boxed{5}\\ \text{RESTR}\ \boxed{6}\cup\boxed{3}\end{bmatrix},\ <\boxed{2}\|\boxed{7}>\Big)$$

*4. A clause for a non-topical element that appears after an accented S:*

(624)

$$\text{TOPIC-COMMENT}\Big(\ \boxed{1},\ <\begin{bmatrix}\text{PHON|ACCENT} & \textit{no-accent}\\ \text{SYNSEM|LOC|MEAN} & \begin{bmatrix}\text{NOM-OBJ}\ \boxed{2}\\ \text{RESTR}\ \boxed{3}\end{bmatrix}\end{bmatrix} \| \boxed{4} >, \begin{bmatrix}\text{TYPE}\ \boxed{5}\\ \text{RESTR}\ \boxed{6}\end{bmatrix},\ \boxed{7}\Big)$$

$$= \text{TOPIC-COMMENT}\Big(\ \boxed{1},\ \boxed{4}, \begin{bmatrix}\text{TYPE}\ \ \text{APPLY}(\boxed{5},\boxed{2})\\ \text{RESTR}\ \boxed{6}\cup\boxed{3}\end{bmatrix},\ \boxed{7}\Big)$$

These two clauses are responsible for dealing with the elements falling to the right of the S. In terms of the operations they perform, (623) is equivalent to (621), (624) is equivalent to (622). Notice, however, that the second arguments of the clauses in (623) and (624) are constrained to have elements with PHON|ACCENT values of sort *no-accent*. This is to capture the fact that postverbal elements in Turkish can never be accented, whether they are topical or not (cf. Section 4.2.2 and Section 5.4.2).

Finally, the TOPIC-COMMENT function will have two base clauses in order to set the value which it will return:

(625) TOPIC-COMMENT(<>, <>, $\left[\begin{array}{l}\text{TYPE } \boxed{1} \\ \text{RESTR } \boxed{2}\end{array}\right]$, <>))

$$= \left[\begin{array}{l}\text{PROP } \left[\begin{array}{l}\text{TOPIC|ROLE } \textit{desc-sit} \\ \text{COMMENT } \boxed{1}\end{array}\right] \\ \text{RESTR } \boxed{2}\end{array}\right]$$

(626) TOPIC-COMMENT(<>, <>, $\left[\begin{array}{l}\text{TYPE } \boxed{1} \\ \text{RESTR } \boxed{2}\end{array}\right]$, $< \boxed{3} \| \boxed{4} >$)

$$= \left[\begin{array}{l}\text{PROP } \left[\begin{array}{l}\text{TOPIC } \quad < \boxed{3} \| \boxed{4} > \\ \text{COMMENT } \boxed{1}\end{array}\right] \\ \text{RESTR } \boxed{2}\end{array}\right]$$

Both of these clauses will be instantiated only when all the elements in their first two arguments have been exhausted. The clause in (625) will handle cases where the S-external elements do not contain any topics. The output of this clause will be a proposition where the topic is the described situation (i.e. a thetic judgment). The clause in (626) will deal with cases where we have topical NPs. Its output will be a proposition where the topic is a list of individuals (i.e. a categorical judgment).

Before formulating the third part of the ISP, we would like to make a final remark. We assume that every sentence must have a focal constituent. Otherwise, the sentence will not be informative (i.e. it will not convey any new information). Our grammar will licence only informative declarative sentences. This will be effected by constraining the FOCUS value of the S daughter to be a non-empty list.

We can now formulate the third part of our Information Structuring Principle as in (627) or, somewhat more formally, as in (628):

(627) *Information Structuring Principle* (part#3):

If the DTRS value is of sort *leftdtrs-s-rightdtrs-struc* and the DTRS|S-DTR|SYNSEM|LOC|MEAN|FOCUS-TAIL|FOCUS value is a non-empty list of assignments, then the mother's MEAN value is TOPIC-COMMENT(*L-DTRS, R-DTRS,* TRANSFORM-TO-TYPE*(ACCENT-S, MEAN-S),* <>),

where *L-DTRS* is the list of daughters preceding the S, *R-DTRS* is the list of daughters following the S, and *ACCENT-S* and *MEAN-S* are, respectively, the ACCENT and MEAN values of the S.

(628)

$$\left[\begin{array}{ll} \text{SYNSEM|LOC|MEAN} & \textit{TOPIC-COMMENT}(\boxed{1},\boxed{2},\text{TRANSFORM-TO-TYPE}(\boxed{3},\boxed{4}),\langle\,\rangle) \\ \text{DTRS} & \left[\begin{array}{ll} \text{LEFT-DTRS} & \boxed{1} \\ \text{S-DTR} & \left[\begin{array}{ll} \text{PHON|ACCENT} & \boxed{3} \\ \text{SYNSEM|LOC|MEAN|}\boxed{4} & \text{FOCUS-TAIL|FOCUS } \textit{ne-list} \end{array}\right] \\ \text{RIGHT-DTRS} & \boxed{2} \end{array}\right] \end{array}\right]$$

**Part#4 of the ISP:**

Finally, the Information Structuring Principle will have a fourth part that applies to the Head-specifier Schema. There are two points which we will take into consideration when formulating this part of the ISP.

First, if a Turkish NP is accented, it is the head daughter that carries that accent. For example, it is the phonological structure of the (a) sentence that is legitimate in the following context, not that of the (b):

(629) Oya NE ye-di?
Oya what eat-pst
'What did Oya eat?'

a. Oya bir ELMA ye-di.
Oya one apple eat-pst
'Oya ate an APPLE.'

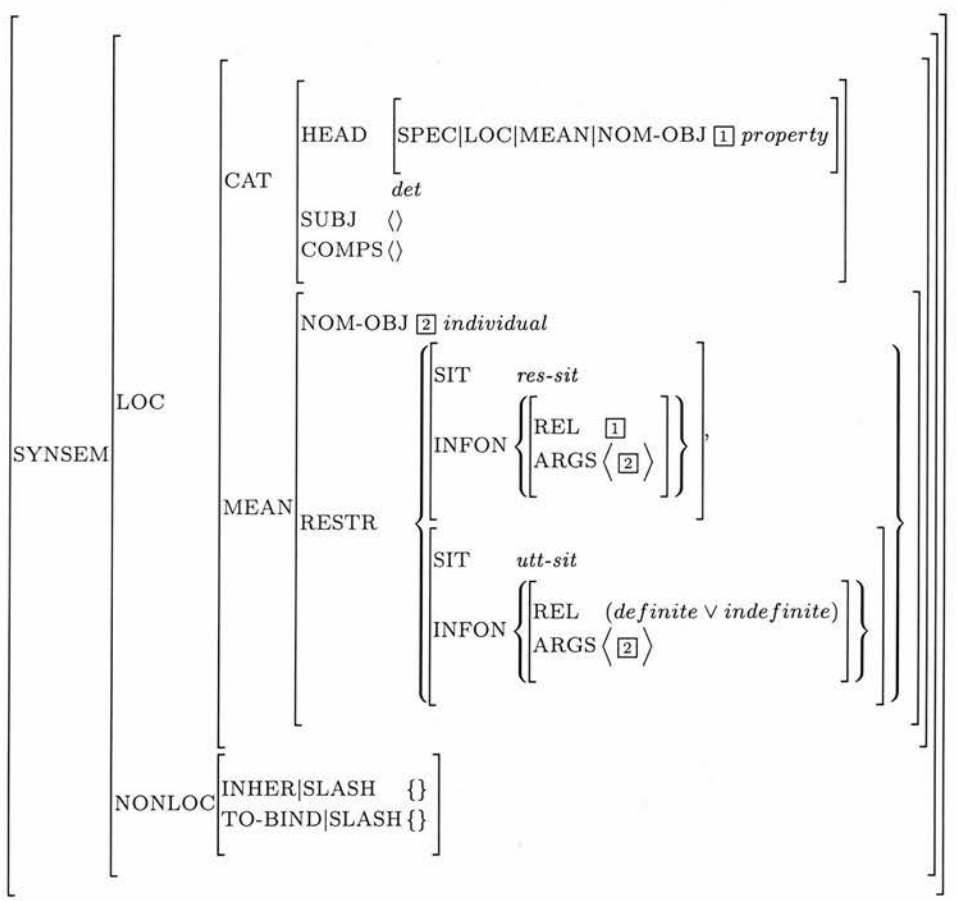
b. *Oya BIR elma ye-di.

It is worth noting that the phonological structure of (b) forces it to receive a narrow-focus reading on *bir* 'one' (which does not project over the whole NP). This reading can be paraphrased as: *the number of apples which Oya ate was one.* This sentence

could be a felicitous reply, for instance, to (the Turkish equivalent of) a question like 'How many apples did Oya eat?'. Our grammar will ignore such cases.

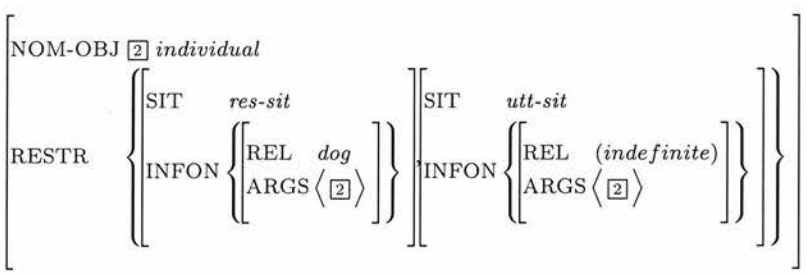
As a second point, recall that our lexical entries for determiners are of the following form:

(630)




This means that when a determiner like *bir* 'one' is combined with a common like *köpek* 'dog', it will have the following MEAN value:

(631)




This is exactly what we want our grammar to yield as the MEAN value of the NP *bir köpek* 'a dog'. Thus, we just need to stipulate that the MEAN value of a nominal

phrase must be structure-shared with the MEAN value of its determiner.

We now state the fourth part of the ISP as follows:

(632) *Information Structuring Principle* (part#4):

> If the DTRS value is of sort *head-spr-struc*, then the mother's PHON|ACCENT value is token-identical to the head daughter's PHON|ACCENT value, and the mother's MEAN value is token-identical to the determiner's MEAN value.

**Note:** We have implemented our grammar in the ALE environment. We will make it available for anyone who is interested.

# Chapter 8

# Conclusions and Further Work

## 8.1 Major conclusions

The purpose of this dissertation was to give an account of the mutual constraints on the levels of morphology, syntax, phonology, semantics and pragmatics in Turkish. In this section, we will present the major conclusions we arrived at in developing this account.

### 8.1.1 Morphology and strongness

We began our analysis by examining the semantic conditions under which the accusative suffix, *-(y)I*, is obligatorily used (cf. Chapter 2). We saw that a Turkish direct object (DO) must carry this suffix, if it receives an interpretation that is:

- definite,
- partitive-indefinite,
- (epistemically) specific or
- strongly quantified,

all of which we categorised as strong interpretations.

Afterwards, we endeavoured to find a general semantic phenomenon underlying all these apparently different semantic conditions which require accusative morphology in the DO position of Turkish sentences. To this end, we first examined the

phenomenon of presupposition (cf. Section 2.5). We saw that each of the strong readings is presuppositional. However, this observation was far from being conclusive to take presuppositionality as the ultimate criterion for the use of accusative morphology in Turkish. We provided some examples showing that in some cases it is possible for the referent of a Turkish DO without case morphology to be a presupposed one. A crucial property of these examples was that the situations described by their sentences were partially known to the hearer prior to the utterance of these sentences.

In Chapter 3, we claimed that it is the distinctness of its resource situation and the described situation that forces a Turkish DO to carry case morphology. We put forward the following principle to formulate what it means for a Turkish DO not to carry case morphology:

(633) WEAK OBJECT PRINCIPLE:

The lack of case morphology in the DO position of a Turkish sentence signals that the resource situation for the nominal occupying this position is the same as the described situation. That is, in such a case the semantic material of the DO is part of the described situation.

(cf. Section 3.2)

Now it is not difficult to understand how the referent of a case morphemeless DO can be a presupposed one. This will be the case when some part of the described situation which contains the semantic material encoded by the DO is presupposed. Clearly, such a case will not violate the Weak Object Principle.

In Section 6.3.2, we complemented the Weak Object Principle with the following one:

(634) STRONG OBJECT PRINCIPLE:

The use of accusative morphology in Turkish indicates that the DO is interpreted as part of a resource situation (that is different from the described one) in the S-level (i.e. semantic) interpretation of the sentence.

By the S-level or semantic interpretation of the sentence, we mean its context-independent interpretation (i.e. the component of its interpretation that does not make reference to the context of utterance). We offered a discussion arguing that the background status of a DO with case morphology can be changed into a focal

one on the discourse-pragmatic layer of interpretation. After having a general look at the interpretive behaviour of the other case suffixes in Turkish, we concluded our discussion of the interaction between Turkish case morphology and strongness with the general principle below:

(635) SEMANTICS PRINCIPLE FOR TURKISH CASE MORPHOLOGY:

In Turkish, ignoring incorporated nominals, the use of case morphology indicates that the semantic material of the nominal serves to describe a resource situation (not identical with the described one) on the semantic layer of interpretation of the sentence. The informational status of the nominal may or may not be changed into a foregrounded one on the discourse-pragmatic layer of interpretation depending on the pragmatic context of utterance.

(cf. Section 7.3.2)

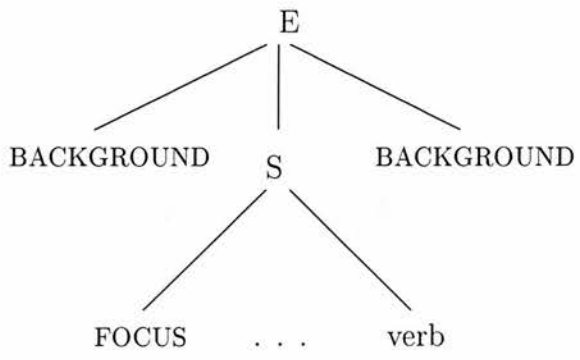
### 8.1.2 Syntax, phonology and focus-background

In Chapter 4, we provided an account of the phonological and syntactic structuring of focus in Turkish. With regard to the syntax of Turkish foci, we made the following general claims:

1. A focal element is restricted to a 'clause-internal' position.
2. A background element can occur either 'clause-internally' or 'clause-externally'.
3. A background element occurring 'clause-internally' must be placed between a focal element and the verb, or must be the verb itself.
4. A background element cannot occur between two focal elements.

We defined 'clause-external' and 'clause-internal' positions by exploiting Banfield's (1973) notion of *expression* (E) (cf. Section 4.2.3). E is a root node. Its immediate constituents are the clause (which we labelled as S) and some clause-external constituents. (636) shows the general form of the syntactic realisation of the focus-background articulation of Turkish sentences:

(636)




As for the phonological aspects of focus, we made the following points:

1. Turkish foci must be associated with a focal accent, which is an H* accent.
2. In nominal foci, the focal accent falls on the nominal head.
3. In verbal foci, the focal accent falls on the leftmost complement within the VP.

### 8.1.3 Syntax, phonology and topic-comment

In Chapter 5, we argued that a complete informational analysis of sentences cannot be given without a notion of *topic*. We claimed that topics are invested with three functions: *textual, communicative* and *predicational*. The first two constitute the sentence-external facet of the topic. The third has to do with the sentence-internal facet of the topic and its analysis requires the complementary notion of *comment*.

As for the linguistic realisation of the topic-comment articulation of Turkish sentences, we made the following observations (cf. Section 5.4):

1. Topics in Turkish must be S-external.
2. New topics must occur to the left of the S.
3. Topics appearing before the S are optionally associated with a B accent.
4. A topic after the S is realised with a level tone.

### 8.1.4 The syntax and semantics of the subject-predicate relation

In Section 6.3, we argued that a sentence undergoes two interpretations in terms of subject-predicate relations: one on the semantic layer of interpretation and one on the discourse-pragmatic layer of interpretation. The former is not susceptible to discourse-pragmatic factors and is structured by the S projection. The latter corresponds to the topic-comment articulation of the sentence and is structured by the E projection.

In Section 5.3.4, we pointed out that the most straightforward syntactic relation that holds between a subject of predication and its predicate is the following:

(637) A subject of predication must c-command its predicate.

The c-command constraint on subject-predicate relations explains why Turkish topics, unlike other background elements, cannot occur S-internally. Topics are subjects of predication. Thus, they have to c-command their predicates (i.e. comments). They can do this only in an S-external position.

As for the semantics of the subject-predicate relation, we made some observations in Section 6.1 which led us to the following conclusions:

1. A subject of predication must be strong.
2. The semantic interpretation of a subject of predication cannot be dependent on that of its predicate.

### 8.1.5 Case marking

In Section 3.4.2, we saw that Turkish has a Case Principle that can informally be expressed as follows:

(638) Case Principle:

In Turkish, every nominal must receive case in one of the following three ways:

- semantically,

- lexically, and
- structurally.

Semantic case is assigned on the basis of the meaning of the nominal it is assigned to. In Turkish, some temporal expressions (such as *dün* 'yesterday' and *yarın* 'tomorrow') are assigned locative case in that way.

Lexical case is assigned based on lexical information. We claimed that this is done in accordance with the following principle:

(639) LEXICAL CASE ASSIGNMENT IN TURKISH:

a. Nominals carrying case morphology must receive the case encoded by their case suffix.

b. Nominals not carrying case morphology can receive nominative case.

Finally, structural case is assigned to a nominal in a particular structural position. We claimed that Turkish nominals can be assigned structural case only if they are adjacent to a lexical head. This is the reason why a Turkish DO without case morphology must occur either in the immediately preverbal position or just before a particle like *dA* 'also'. These are the positions where the DO can receive structural case.

### 8.1.6 Definiteness marking

In Section 7.3.4, we proposed a principle that is responsible for the marking of definiteness in Turkish:

(640) DEFINITENESS MARKING PRINCIPLE (for Turkish):

a. A non-incorporated nominal with no determiner is interpreted as definite.

b. A nominal with a determiner receives its status of definiteness from its determiner.

As in our analysis definiteness is a property of discourse referents (cf. Section 2.1) and incorporated nominals do not introduce discourse referents (cf. Section 3.4.2),

an incorporated nominal is neither definite nor indefinite. In other words, the definite/indefinite distinction does not apply to incorporated nominals.

(640a) explains why a DO with no determiner but with accusative morphology is restricted to a definite interpretation in Turkish. We saw in Section 3.4.2 that an incorporated DO in Turkish is not allowed to carry case morphology. This means that a Turkish DO with case morphology will certainly be a non-incorporated one. And, by (640a), a non-incorporated DO with no determiner will be interpreted as definite.

## 8.2 Further work

In Section 6.1, we pointed out that in Turkish the grammatical subject of a nominalised subordinate clause must carry the genitive suffix, *-(n)In*, if it is VP-external and it does not carry any case morphology if it is VP-internal. Furthermore, we showed that the grammatical subject must be strong in the former case (cf. Section 6.1.1) and weak in the latter case (cf. Section 6.3.1). In fact, as noted in Section 1.2, nominalised subordinate clauses are not the only syntactic environments where variations can be observed with regard to the employment of the genitive suffix. Two other constructions which provide only sufficient but not necessary conditions for the use of this suffix are relative clauses and possessive NPs. Both (a) and (b) sentences are grammatical in the following examples:

(641) a. *Köpeğ-in ısır-dığ-ı* *çocuk* çok ağla-dı.
dog-gen3 bite-part-poss3 child a.lot cry-pst
'*The child who the dog bit* cried a lot.'

b. *Köpek ısır-an* *çocuk* çok ağla-dı.
dog bite-part child a.lot cry-pst
'*The child who was dog-bitten* cried a lot.'

(642) a. Halı-ya *Portakal-ın su-yu* dökül-dü.
carpet-dat orange-gen3 juice-poss3 spill-pst
'*The juice of the orange* spilled over the carpet.'

b. Halı-ya *Portakal su-yu* dökül-dü.
carpet-dat orange juice-poss3 spill-pst
'*Orange juice* spilled over the carpet.'

More interesting about these examples is that the genitive marked nominals in the (a) sentences receive strong definite interpretations, whereas their non-genitive

marked counterparts in the (b) sentences are assigned weak incorporated readings. It seems that it might be very fruitful to approach the semantics of relative clauses and possessive NPs from the point of view of the analysis proposed in Chapter 6 (i.e. in terms of the semantics of subject-predicate relations).

Another area that awaits further work is the interaction between the semantic and discourse-pragmatic layers of interpretation. Although we offered a discussion to show that a piece of information that is backgrounded on the semantic layer can be rendered focal on the layer of discourse-pragmatic interpretation, we have not gone into further aspects of the interaction between the two layers. This would certainly be a desirable work that complements our analysis.

A third task that remains to be carried out in the future is to elaborate the grammar which we developed in Chapter 7 to an extent that it can deal with phenomena like quantification, specificity, semantics of focus particles, scopal relations, anaphoric relations and semantics of S-internal predication. Of course, the handling of some of these phenomena might require the grammar to be complemented with a pragmatic component that is responsible to deal with the component of the interpretation contributed by the context of use.

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